As filed with the Securities and Exchange Commission on January 27, 2015

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington D.C. 20549

FORM 20-F

☐ REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 for the fiscal year ended December 31, 2014

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

☐ SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission file number 1-15024

NOVARTIS AG

(Exact name of Registrant as specified in its charter)

NOVARTIS Inc.

(Translation of Registrant's name into English)

Switzerland

(Jurisdiction of incorporation or organization)

Lichtstrasse 35
4056 Basel, Switzerland
(Address of principal executive offices)

Felix R. Ehrat
Group General Counsel
Novartis AG
CH-4056 Basel
Switzerland
Tel.: 011-41-61-324-1111
Fax: 011-41-61-324-7826

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered pursuant to Section 12(b) of the Act:

Title of class	Name of each exchange on which registered
American Depositary Shares each representing 1 share	**New York Stock Exchange, Inc.**
Ordinary shares, nominal value CHF 0.50 per share*	**New York Stock Exchange, Inc.***

Securities registered or to be registered pursuant to Section 12(g) of the Act:

None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

2,398,626,257 shares

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☒ **No** ☐

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes ☐ **No** ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ **No** ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act (Check one):

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

☐ U.S. GAAP ☒ International Financial Reporting Standards as issued by the International Accounting Standards Board ☐ Other

If "Other" has been checked in response to the previous question indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 ☐ **Item 18** ☐

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes ☐ **No** ☒

* Not for trading but only in connection with the registration of American Depositary Shares representing such ordinary shares.

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INTRODUCTION AND USE OF CERTAIN TERMS

Novartis AG and its consolidated affiliates publish consolidated financial statements expressed in US dollars. Our consolidated financial statements found in Item 18 of this annual report on Form 20-F (Form 20-F) are prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

Unless the context requires otherwise, the words "we," "our," "us," "Novartis," "Group," "Company," and similar words or phrases in this Form 20-F refer to Novartis AG and its consolidated affiliates. However, each Group company is legally separate from all other Group companies and manages its business independently through its respective board of directors or other top local management body. No Group company operates the business of another Group company. Each executive identified in this Form 20-F reports directly to other executives of the Group company which employs the executive, or to that Group company's board of directors.

In this Form 20-F, references to "US dollars" or "$" are to the lawful currency of the United States of America, and references to "CHF" are to Swiss francs; references to the "United States" or to "US" are to the United States of America, references to the "European Union" or to "EU" are to the European Union and its 28 member states, references to "Latin America" are to Central and South America, including the Caribbean, and references to "Australasia" are to Australia, New Zealand, Melanesia, Micronesia and Polynesia, unless the context otherwise requires; references to "associates" are to employees of our affiliates; references to the "FDA" are to the US Food and Drug Administration, references to "EMA" are to the European Medicines Agency, an agency of the EU, and references to the "CHMP" are to the Committee for Medicinal Products for Human Use of the EMA; references to "ADR" or "ADRs" are to Novartis American Depositary Receipts, and references to "ADS" or "ADSs" are to Novartis American Depositary Shares; references to the "NYSE" are to the New York Stock Exchange, and references to the "SIX" are to the SIX Swiss Exchange; references to "GSK" are to GlaxoSmithKline plc, references to "Lilly" are to Eli Lilly and Company, and references to "CSL" are to CSL Limited.

All product names appearing in *italics* are trademarks owned by or licensed to Group companies. Product names identified by a "®" or a "™" are trademarks that are not owned by or licensed to Group companies.

FORWARD-LOOKING STATEMENTS

This Form 20-F contains certain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Other written materials filed with or furnished to the US Securities and Exchange Commission (SEC) by Novartis, as well as other written and oral statements made to the public, may also contain forward-looking statements. Forward-looking statements can be identified by words such as "potential," "expected," "will," "planned," "pipeline," "outlook," or similar terms, or by express or implied discussions regarding potential new products, potential new indications for existing products, or regarding potential future revenues from any such products; potential shareholder returns or credit ratings; or regarding the potential completion of the announced transactions with GSK and CSL, or regarding potential future sales or earnings of any of the businesses involved in the transactions with GSK, Lilly or CSL, or regarding any potential strategic benefits, synergies or opportunities as a result of these transactions; or regarding potential future sales or earnings of the Novartis Group or any of its divisions; or by discussions of strategy, plans, expectations or intentions. You should not place undue reliance on these statements.

Such forward-looking statements are based on the current beliefs and expectations of management regarding future events, and are subject to significant known and unknown risks and uncertainties. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect,

actual results may vary materially from those set forth in the forward-looking statements. There can be no guarantee that any new products will be approved for sale in any market, or that any new indications will be approved for any existing products in any market, or that any approvals which are obtained will be obtained at any particular time, or that any such products will achieve any particular revenue levels. Nor can there be any guarantee that the announced transactions with GSK and CSL will be completed in the expected form or within the expected time frame or at all. Neither can there be any guarantee that Novartis will be able to realize any of the potential strategic benefits, synergies or opportunities as a result of the transactions with GSK, Lilly or CSL. Neither can there be any guarantee that Novartis or any of the businesses involved in the transactions will achieve any particular financial results in the future. Nor can there be any guarantee that shareholders will achieve any particular level of shareholder returns. Neither can there be any guarantee that the Group, or any of its divisions, will be commercially successful in the future, or achieve any particular credit rating.

In particular, management's expectations could be affected by, among other things:

- unexpected regulatory actions or delays or government regulation generally, including an unexpected failure to obtain necessary government approvals for the transactions, or unexpected delays in obtaining such approvals;
- the potential that the strategic benefits, synergies or opportunities expected from the announced transactions, including the divestment of our former Animal Health Division to Lilly, may not be realized or may take longer to realize than expected;
- the inherent uncertainties involved in predicting shareholder returns or credit ratings;
- the uncertainties inherent in research and development, including unexpected clinical trial results and additional analysis of existing clinical data;
- our ability to obtain or maintain proprietary intellectual property protection, including the ultimate extent of the impact on Novartis of the loss of patent protection and exclusivity on key products which commenced in prior years and will continue this year;
- unexpected manufacturing or quality issues;
- global trends toward health care cost containment, including ongoing pricing pressures;
- uncertainties regarding actual or potential legal proceedings, including, among others, actual or potential product liability litigation, litigation and investigations regarding sales and marketing practices, government investigations and intellectual property disputes;
- general economic and industry conditions, including uncertainties regarding the effects of the persistently weak economic and financial environment in many countries;
- uncertainties regarding future global exchange rates, including as a result of recent changes in monetary policy by the Swiss National Bank;
- uncertainties regarding future demand for our products;
- uncertainties involved in the development of new healthcare products; and
- uncertainties regarding potential significant breaches of data security or disruptions of our information technology systems.

Some of these factors are discussed in more detail in this Form 20-F, including under "Item 3. Key Information—3.D. Risk factors," "Item 4. Information on the Company," and "Item 5. Operating and Financial Review and Prospects." Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those described in this Form 20-F as anticipated, believed, estimated or expected. We provide the information in this Form 20-F as of the date of its filing. We do not intend, and do not assume any obligation, to update any information or forward-looking statements set out in this Form 20-F as a result of new information, future events or otherwise.

PART I

Item 1. Identity of Directors, Senior Management and Advisers

Not applicable.

Item 2. Offer Statistics and Expected Timetable

Not applicable.

Item 3. Key Information

3.A Selected Financial Data

The selected financial information set out below has been extracted from our consolidated financial statements prepared in accordance with IFRS as issued by the IASB. Our consolidated financial statements for the years ended December 31, 2014, 2013 and 2012 are included in "Item 18. Financial Statements" in this Form 20-F.

All financial data should be read in conjunction with "Item 5. Operating and Financial Review and Prospects". All financial data presented in this Form 20-F are qualified in their entirety by reference to the consolidated financial statements and their notes.

	Year Ended December 31,				
	2014	**2013**	**2012**	**2011**	**2010**
	($ millions, except per share information)				
INCOME STATEMENT DATA					
Group net sales	**57,996**	**57,920**	**56,673**	**58,566**	**50,624**
Net sales from continuing operations	**52,419**	**52,090**	**51,330**	**52,195**	**43,539**
Operating income from continuing operations	**11,089**	**10,983**	**11,507**	**10,293**	**10,153**
Income from associated companies	1,918	599	549	526	798
Interest expense	(704)	(683)	(724)	(751)	(692)
Other financial (expense)/income	(31)	(92)	(96)	(2)	64
Income before taxes from continuing operations	**12,272**	**10,807**	**11,236**	**10,066**	**10,323**
Taxes	(1,545)	(1,498)	(1,706)	(1,381)	(1,266)
Net income from continuing operations	**10,727**	**9,309**	**9,530**	**8,685**	**9,057**
Net (loss)/income from discontinuing operations	(447)	(17)	(147)	387	912
Group net income	**10,280**	**9,292**	**9,383**	**9,072**	**9,969**
Attributable to:					
Shareholders of Novartis AG	10,210	9,175	9,270	8,940	9,794
Non-controlling interests	70	117	113	132	175
Basic earnings per share ($)					
Continuing operations	4.39	3.76	3.89	3.59	3.88
Discontinuing operations	(0.18)	0.00	(0.06)	0.16	0.40
Total	4.21	3.76	3.83	3.75	4.28
Diluted earnings per share ($)					
Continuing operations	4.31	3.70	3.85	3.54	3.86
Discontinuing operations	(0.18)	0.00	(0.06)	0.16	0.40
Total	4.13	3.70	3.79	3.70	4.26
Cash dividends[1]	6,810	6,100	6,030	5,368	4,486
Cash dividends per share in CHF[2]	2.60	2.45	2.30	2.25	2.20

(1) Cash dividends represent cash payments in the applicable year that generally relates to earnings of the previous year.

(2) Cash dividends per share represent dividends proposed that relate to earnings of the current year. Dividends for 2014 will be proposed to the Annual General Meeting on February 27, 2015 for approval.

	Year Ended December 31,				
	2014	2013	2012	2011	2010
			($ millions)		
BALANCE SHEET DATA					
Cash, cash equivalents and marketable securities & derivative financial instruments	13,862	9,222	8,119	5,075	8,134
Inventories	6,093	7,267	6,744	5,930	6,093
Other current assets	10,805	13,294	13,141	13,079	12,458
Non-current assets	87,826	95,712	96,187	93,384	96,620
Assets related to discontinuing operations	6,801	759			
Total assets	**125,387**	**126,254**	**124,191**	**117,468**	**123,305**
Trade accounts payable	5,419	6,148	5,593	4,989	4,788
Other current liabilities	19,136	20,170	18,458	18,159	19,870
Non-current liabilities	27,570	25,414	30,877	28,331	28,856
Liabilities related to discontinuing operations	2,418	50			
Total liabilities	**54,543**	**51,782**	**54,928**	**51,479**	**53,514**
Issued share capital and reserves attributable to shareholders of Novartis AG	70,766	74,343	69,137	65,893	63,218
Non-controlling interests	78	129	126	96	6,573
Total equity	**70,844**	**74,472**	**69,263**	**65,989**	**69,791**
Total liabilities and equity	**125,387**	**126,254**	**124,191**	**117,468**	**123,305**
Net assets	70,844	74,472	69,263	65,989	69,791
Outstanding share capital	898	912	909	895	832
Total outstanding shares (millions)	2,399	2,426	2,421	2,407	2,289

Cash Dividends per Share

Cash dividends are translated into US dollars at the Bloomberg Market System Rate on the payment date. Because we pay dividends in Swiss francs, exchange rate fluctuations will affect the US dollar amounts received by holders of ADRs.

Year Earned	Month and Year Paid	Total Dividend per share (CHF)	Total Dividend per share ($)
2010	March 2011	2.20	2.37
2011	March 2012	2.25	2.48
2012	March 2013	2.30	2.44
2013	March 2014	2.45	2.76
2014[1]	March 2015	2.60	2.63[2]

(1) Dividend to be proposed at the Annual General Meeting on February 27, 2015 and to be distributed March 5, 2015

(2) Translated into US dollars at the 2014 Bloomberg Market System December 31, 2014 rate of $1.010 to the Swiss franc. This translation is an example only, and should not be construed as a representation that the Swiss franc amount represents, or has been or could be converted into US dollars at that or any other rate.

Exchange Rates

The following table shows, for the years and dates indicated, certain information concerning the rate of exchange of US dollar per Swiss franc based on exchange rate information found on Bloomberg Market System. The exchange rate in effect on January 21, 2015, as found on Bloomberg Market System, was CHF 1.00 = $1.14.

Year ended December 31, ($ per CHF)	Period End	Average[1]	Low	High
2010	1.06	0.96	0.86	1.07
2011	1.06	1.13	1.06	1.25
2012	1.09	1.07	1.02	1.12
2013	1.12	1.08	1.05	1.12
2014	1.01	1.09	1.01	1.13
Month				
August 2014			1.09	1.11
September 2014			1.05	1.09
October 2014			1.03	1.06
November 2014			1.03	1.04
December 2014			1.01	1.04
January 2015 (through January 21, 2015)			0.98	1.16

[1] Represents the average of the exchange rates on the last day of each month during the year.

3.B Capitalization and Indebtedness

Not applicable.

3.C Reasons for the offer and use of proceeds

Not applicable.

3.D Risk Factors

Our businesses face significant risks and uncertainties. You should carefully consider all of the information set forth in this annual report on Form 20-F and in other documents we file with or furnish to the SEC, including the following risk factors, before deciding to invest in any Novartis securities. Our business, as well as our financial condition or results of operations could be materially adversely affected by any of these risks, as well as other risks and uncertainties not currently known to us or not currently considered material.

Risks Facing Our Business

Our products face important patent expirations and significant competition.

The products of our Pharmaceuticals and Alcon Divisions, as well as key products from our other divisions, are generally protected by patent rights, which are intended to provide us with exclusive rights to market the patented products. However, those patent rights are of varying strengths and durations. Loss of market exclusivity for one or more important products have had, and can be expected to continue to have a material adverse effect on our results of operations.

The introduction of generic competition for a patented medicine typically results in a significant and rapid reduction in net sales and net income for the patented product because generic manufacturers typically offer their unpatented versions at sharply lower prices. Such competition can result from the regular expiration of the term of the patent. Such competition can also result from the entry of generic versions of another medicine in the same therapeutic class as one of our drugs, or in another competing therapeutic class, or from the compulsory licensing of our drugs by governments, or from a general weakening of intellectual property laws in certain countries around the world. In addition, generic manufacturers frequently take an aggressive approach to challenging patents, conducting so-called "launches at risk" of products that are still under legal challenge for patent infringement, before final resolution of legal proceedings.

We also rely in all aspects of our businesses on unpatented proprietary technology, know-how, trade secrets and other confidential information, which we seek to protect through various measures including confidentiality agreements with licensees, employees, third-party collaborators, and consultants who may have access to such information. If these agreements are breached, our contractual remedies may not be adequate to cover any losses.

Some of our best-selling products have begun or are about to face significant competition due to the end of market exclusivity resulting from the expiry of patent protection.

- The patent on imatinib, the active ingredient in our best-selling product *Gleevec*/*Glivec* (cancer), will expire in July 2015 in the US, in 2016 in the major European countries and expired in 2014 for the main indications in Japan. Additional patents claiming innovative features of *Gleevec*/*Glivec* have been challenged in the US. A settlement with one of these generic manufacturers will allow that generic manufacturer to enter the US market on February 1, 2016. Generic versions of *Gleevec*/*Glivec* have already launched in a number of countries around the world.
- The patent on valsartan, the active ingredient in *Diovan*/*Co-Diovan*/*Diovan HCT* (high blood pressure), which had long been our best-selling product, has expired in the US, EU and Japan, and generic competitors have launched there. Patent protection for *Co-Diovan* will expire in Japan in 2016. The active ingredient valsartan is also used in the single-pill combination therapies *Exforge*/*Exforge HCT* (high blood pressure). While separate patents exist in the EU to protect this combination product, they have been challenged. Market exclusivities for *Exforge*/*Exforge HCT* will remain in the EU due to regulatory exclusivities. However, there is a risk that generic manufacturers may circumvent regulatory exclusivity and gain approval of a combination valsartan-amlodipine product. In the US, *Exforge* already faces generic competition despite the existence of separate patents covering the product.
- Patent protection for octreotide acetate, the active ingredient in *Sandostatin,* has expired. Generic versions of *Sandostatin* SC are available in the US and elsewhere. A series of US patents protect *Sandostatin LAR*, the long-acting version of *Sandostatin* which represents a majority of our *Sandostatin* US sales. Some of these US patents have already expired, and the last of these US patents is expected to expire in 2017. Patents protecting the *Sandostatin LAR* formulation in key markets outside the US have expired.
- Patent protection on rivastigmine, the active ingredient in *Exelon*, has expired and *Exelon* capsules are subject to generic competition in major markets, including the US and all of Europe. We hold additional patents with respect to *Exelon* Patch, which makes up a substantial portion of our *Exelon* sales, but these have been challenged. Generic versions of *Exelon* Patch are on the market in several European countries.

For more information on the patent status of our Pharmaceuticals Division's products see "Item 4. Information on the Company—Item 4.B Business Overview—Pharmaceuticals—Intellectual Property" and "Item 18. Financial Statements—Note 20".

In 2015, the impact of generic competition on our net sales is expected to be approximately $2.5 billion. Because we typically have substantially reduced marketing and research and development expenses related to a product in its final year of exclusivity, it is expected that the loss of patent protection will have an impact on our operating income which can be expected to correspond to a significant portion of the product's lost sales. The magnitude of such an impact could depend on a number of factors, including the time of year at which such exclusivity would be lost; the ease or difficulty of manufacturing a competitor product and obtaining regulatory approval to market it; the number of generic competitor products approved, including whether, in the US, a single competitor is granted an exclusive marketing period, and whether an authorized generic is launched; and the geographies in which generic competitor products are approved, including the strength of the market for generic pharmaceutical products in such geographies and the comparative profitability of branded pharmaceutical products in such geographies.

Clearly, with respect to major products for which the patent terms are expiring, the loss of exclusivity of these products can be expected to have a material adverse effect on our business, financial condition and results of operations. In addition, should we unexpectedly lose exclusivity on additional products as a result of patent litigation or other reasons, this could also have a material adverse effect on our business, financial condition and results of operations, both due to the loss of revenue and earnings, and the difficulties in planning for such losses.

Similarly, all of our businesses are faced with intense competition from new products and technological advances from competitors, including new competitors from other industries that are entering the healthcare field. Physicians, patients and third-party payers may choose our competitors' products instead of ours if they perceive them to be safer, more effective, easier to administer, less expensive, more convenient, or more cost-effective.

Products that compete with ours, including products competing against some of our best-selling products, are launched from time to time. We cannot predict with accuracy the timing of the introduction of such competitive products or their possible effect on our sales. However, products significantly competitive to our major products *Lucentis* and *Gilenya* have been launched. Such products, and other competitive products, could adversely affect the revenues from our products and our results of operations.

Our research and development efforts may not succeed in bringing new products to market, or may fail to do so cost-efficiently enough, or in a manner sufficient to grow our business and replace lost revenues and income.

Our ability to continue to grow our business and to replace sales lost due to competition or to other sources depends in significant part upon the success of our research and development activities in identifying, and successfully and cost-effectively developing new products that address unmet medical needs, are accepted by patients and physicians, and are reimbursed by payors. To accomplish this, we commit substantial effort, funds and other resources across all our divisions to research and development, both through our own dedicated resources and through collaborations with third parties. Developing new healthcare products and bringing them to market, however, is a highly costly, lengthy and uncertain process. In spite of our significant investments, there can be no guarantee that our research and development activities will produce commercially viable new products that will enable us to grow our business and replace lost revenues and income.

Using the products of our Pharmaceuticals Division as an example, the research and development process for a new product can take up to 15 years, or even longer, from discovery to commercial product launch—and with a limited available patent life, the longer it takes to develop a product, the less time there will be for us to recoup our development costs. New products need not only undergo intensive preclinical and clinical testing, but also must be approved by means of highly complex, lengthy and expensive approval processes which can vary from country to country. During each stage, there is a substantial risk that we will encounter serious obstacles which will further delay us and add substantial expense, that we will only develop a product with limited potential for commercial success, or that we will be forced to abandon a product in which we have invested substantial amounts of time and money. These

risks may include: failure of the product candidate in preclinical studies; difficulty enrolling patients in clinical trials or delays or clinical trial holds at clinical trial sites; delays in completing formulation and other testing and work necessary to support an application for regulatory approval; adverse reactions to the product candidate or other safety concerns; insufficient clinical trial data to support the safety or efficacy of the product candidate; an inability to manufacture sufficient quantities of the product candidate for development or commercialization activities in a timely and cost-effective manner; and failure to obtain, or delays in obtaining, the required regulatory approvals for the product candidate or the facilities in which it is manufactured.

In addition, following a series of widely publicized issues, health regulators have increased their focus on product safety. Governmental authorities and payors around the world have also paid increased attention to whether new products offer a significant benefit over other products in the same therapeutic class. These developments have led to requests for more clinical trial data, for the inclusion of a significantly higher number of patients in clinical trials, and for more detailed analyses of the trials. As a result, the already lengthy and expensive process of obtaining regulatory approvals and reimbursement for pharmaceutical products has become even more challenging.

For the same reason, the post-approval regulatory burden has also increased. Approved drugs are subject to various requirements such as risk evaluation and mitigation strategies (REMS), risk management plans, comparative effectiveness studies, health technology assessments and requirements to conduct post-approval Phase IV clinical trials to gather additional safety and other data on products. These requirements have the effect of making the maintenance of regulatory approvals and of achieving reimbursement for our products increasingly expensive, and further heightening the risk of recalls, product withdrawals, loss of revenues or loss of market share.

Our other divisions face similar challenges in developing new products and bringing them to market. Alcon's Ophthalmic Pharmaceuticals products and the products of our Vaccines Division all must be developed and approved in accordance with essentially the same processes as faced by our Pharmaceuticals Division. Alcon's Surgical and Vision Care products face similarly difficult development and approval processes. Alcon makes significant investments in research and development to develop new eye care products to replace sales that may be lost to generic or other competition and to grow its businesses. Vaccines has, and continues to expend considerable time and resources to fully develop and bring to market new vaccines, including vaccines to combat meningococcal disease. If these efforts do not bear significant fruit, they could have a material adverse effect on the medium to long-term success of these divisions, and of the Group as a whole.

In addition, our Sandoz Division has made, and expects to continue to make, significant investments in the development of differentiated, "difficult-to-make" generic products, including biotechnology-based, "biologic" medicines intended for sale as bioequivalent or "biosimilar" generic versions of currently-marketed biotechnology products. While the development of such products typically is significantly less costly and complex than the development of the equivalent originator medicines, it is nonetheless significantly more costly and complex than for non-differentiated generic products. In addition, to date, many countries do not yet have a fully-developed legislative or regulatory pathway which would permit biosimilars to be brought to market or sold in a manner in which the biosimilar product would be readily substitutable for the originator product. Significant difficulties in the development of differentiated products, further delays in the development of such regulatory pathways, or any significant impediments that may ultimately be built into such pathways, could put at risk the significant investments that Sandoz has made, and will continue to make, in the development of differentiated products in general, and in its biotechnology operations in particular, and could have a material adverse effect on the long-term success of the Sandoz Division and the Group as a whole.

If we are unable to cost-effectively maintain an adequate flow of successful new products and new indications for existing products sufficient to cover our substantial research and development costs and the decline in sales of older products that either become subject to generic competition, or are displaced by

competing products or therapies, this could have a material adverse effect on our business, financial condition or results of operations. For a description of the approval processes which must be followed to market our products, see the sections headed "Regulation" included in the descriptions of our five operating divisions under "Item 4. Information on the Company—Item 4.B Business Overview."

Our business is increasingly affected by pressures on pricing for our products.

The growth of overall healthcare costs as a percentage of gross domestic product in many countries means that governments and payors are under intense pressure to control healthcare spending even more tightly. These pressures are particularly strong given the persistently weak economic and financial environment in many countries and the increasing demand for healthcare resulting from the aging of the global population and the prevalence of behaviors that increase the risk of obesity and other chronic diseases. In addition, in certain countries, patients, healthcare providers and the media are increasingly raising questions about healthcare pricing issues. As a result, our businesses and the healthcare industry in general are operating in an ever more challenging environment with very significant pricing pressures. These ongoing pressures affect all of our divisions that rely on reimbursement—including Pharmaceuticals, Alcon, Sandoz and Vaccines. They involve a number of cost-containment measures, such as government-imposed industry-wide price reductions, mandatory pricing systems, reference pricing systems, payors limiting access to treatments based on cost-benefit analyses, an increase in imports of drugs from lower-cost countries to higher-cost countries, shifting of the payment burden to patients through higher co-payments, limiting physicians' ability to choose among competing medicines, mandatory substitution of generic drugs for the patented equivalent, and growing pressure on physicians to reduce the prescribing of patented prescription medicines.

As a result of such measures, we faced downward pricing pressures on our patented and generic drugs in many countries in 2014. For example, during 2013, a German agency, the Gemeinsamer Bundesausschuss (G-BA), initiated an analysis of the benefits of drugs approved prior to 2011. As part of that analysis the G-BA concluded that our type 2 diabetes medicines *Galvus* and *Eucreas* did not provide an added benefit over certain other medicines indicated for the treatment of that disease. As a result, we were unable to reach agreement with the head organization of the German statutory health insurance funds, GKV-Spitzenverband, on an acceptable price for *Galvus* and *Eucreas*, and, in 2014, we stopped distribution of these products in Germany.

We expect these pressures to continue in 2015 as healthcare payors around the globe, including government-controlled health authorities, insurance companies and managed care organizations, step up initiatives to reduce the overall cost of healthcare, restrict access to higher-priced new medicines, increase the use of generics and impose overall price cuts. For more information on price controls and on our challenging business environment see "Item 4. Information on the Company—Item 4.B Business Overview—Pharmaceuticals—Price Controls."

Failure to comply with law, and resulting investigations and legal proceedings may have a significant negative effect on our results of operations.

We are obligated to comply with the laws of all of the countries around the world in which we operate and sell products with respect to an extremely wide and growing range of activities, as well as with new requirements imposed on us from time to time as government and public expectations regarding acceptable corporate behavior change. For example, there are new laws in the US and in other countries around the world that require us to be more transparent with respect to our interactions with healthcare professionals. To help us in our efforts to comply with the many requirements that impact us, we have a significant global ethics and compliance program in place, and we devote substantial time and resources to efforts to ensure that our business is conducted in a lawful and publicly acceptable manner. Nonetheless, despite our efforts, any failure to comply with law or with heightened public expectations could lead to

substantial liabilities that may not be covered by insurance, or to other significant losses, and could affect our business and reputation.

In particular, in recent years, there has been a trend of increasing government investigations and litigations against companies operating in our industry, both in the US and in an increasing number of countries around the world. A number of our subsidiaries are, and will likely continue to be, subject to various legal proceedings that arise from time to time, such as proceedings regarding sales and marketing practices, product liability, commercial disputes, employment and wrongful discharge, antitrust, securities, health and safety, environmental, tax, privacy, and intellectual property matters. Such proceedings are inherently unpredictable, and large judgments sometimes occur. As a consequence, we may in the future incur judgments or enter into settlements of claims that could have a material adverse effect on our results of operations or cash flows.

In addition, governments and regulatory authorities around the world have been stepping up their compliance and law enforcement activities in recent years in key areas, including sales and marketing practices, corruption, trade restrictions, embargo legislation, insider trading, antitrust, and data privacy, and are increasingly challenging practices previously considered to be legal. Responding to such investigations is costly, and requires an increasing amount of management's time and attention. In addition, such investigations may affect our reputation, create a risk of potential exclusion from government reimbursement programs in the US and other countries, and may lead to litigation and monetary penalties. These factors have contributed to decisions by us and other companies in our industry, when deemed in their interest, to enter into settlement agreements with governmental authorities around the world prior to any formal decision by the authorities. These settlements have involved and may continue to involve large cash payments, including the potential repayment of amounts allegedly obtained improperly, and other penalties, including treble damages. In addition, settlements of healthcare fraud cases in the US and other countries sometimes require companies to enter into corporate integrity or similar agreements, which are intended to regulate company behavior for a period of years. Our affiliate Novartis Pharmaceuticals Corporation is a party to such an agreement, which is scheduled to expire in 2015. Also, matters underlying governmental investigations and settlements may be the subject of separate private litigation.

In addition, our Sandoz Division may, from time to time, seek approval to market a generic version of a product before the expiration of patents claimed by the marketer of the patented product. We do this in cases where we believe that the relevant patents are invalid, unenforceable, or would not be infringed by our generic product. As a result, affiliates of our Sandoz Division frequently face patent litigation, and in certain circumstances, we may elect to market a generic product even though patent infringement actions are still pending. Should we elect to proceed in this manner and conduct a "launch at risk," we could face substantial damages if the final court decision is adverse to us.

Our businesses are currently subject to a number of these cases and governmental investigations, as well as information requests by regulatory authorities. For more detail regarding specific legal matters currently pending against us and provisions for such matters, see "Item 18. Financial Statements—Note 20." See also "—Our reliance on outsourcing and third parties for the performance of key business functions heightens the risks faced by our businesses" below. Adverse judgments or settlements in any of the significant investigations or cases against us could have a material adverse effect on our business, financial condition and results of operations.

The manufacture of our products is highly regulated and complex, and may result in a variety of issues that could lead to extended supply disruptions and significant liability.

The manufacture of our products is heavily regulated by governmental health authorities around the world, including the FDA. Whether our products are manufactured at our own dedicated manufacturing facilities or by third parties, we must ensure that all manufacturing processes comply with current Good Manufacturing Practices (cGMP) and other applicable regulations, as well as with our own high quality

standards. In recent years, health authorities have intensified their scrutiny of manufacturers' compliance with such requirements, and are increasingly challenging practices that were previously considered acceptable. If we or our third-party suppliers fail to comply fully with these requirements and the health authorities' expectations, then we could be required to shut down our production facilities or production lines, or could be prevented from importing our products from one country to another. This could lead to product shortages, or to our being entirely unable to supply products to patients for an extended period of time. And such shortages or shut downs have led to and could continue to lead to significant losses of sales revenue and to potential third-party litigation. In addition, health authorities have in some cases imposed significant penalties for such failures to comply with cGMP. A failure to comply fully with cGMP could also lead to a delay in the approval of new products to be manufactured at the impacted site.

Like our competitors, we have faced significant manufacturing issues in recent years. As a result of such issues, we were unable to supply certain products to the market for significant periods of time, and suffered significant losses in sales and market share. These supply issues have required us to outsource the production of certain key products that were previously manufactured in our own production facilities, which may limit the potential profitability of such products. In addition, to meet health authority and our own high quality standards, we have expended considerable resources to upgrade and remediate issues at our sites.

In addition, to meet increasing health authority expectations, we are devoting substantial time and resources to improve quality and assure consistency of product supply at our manufacturing sites around the world. Ultimately, there can be no guarantee of the outcome of these efforts. Nor can there be any guarantee that we will not again face significant manufacturing issues, or that we will successfully manage such issues when they arise.

In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials. For some products and raw materials, we may rely on a single source of supply. In particular, a significant portion of our portfolio, including products from our Pharmaceuticals, Alcon, Vaccines, and Sandoz Divisions, are "biologic" products. Unlike traditional "small-molecule" drugs, biologic drugs or other biologic-based products cannot be manufactured synthetically, but typically must be produced from living plant or animal micro-organisms. As a result, the production of biologic-based products which meet all regulatory requirements is especially complex. Even slight deviations at any point in the production process may lead to production failures or recalls. In addition, because the production process is based on living plant or animal micro-organisms, the process could be affected by contaminants which could impact those micro-organisms. As a result, the inherent fragility of certain of our raw material supplies and production processes may cause the production of one or more of our products to be disrupted, potentially for extended periods of time.

Also as part of the Group's portfolio of products, we have a number of sterile products, including oncology products, which are technically complex to manufacture, and require sophisticated environmental controls. Because the production process for such products is so complex and sensitive, the chance of production failures and lengthy supply interruptions is increased.

Finally, in addition to potential liability for government penalties, because our products are intended to promote the health of patients, for some of our products, any supply disruption or other production issue could endanger our reputation and subject us to lawsuits or to allegations that the public health, or the health of individuals, has been harmed.

In sum, a disruption in the supply of certain key products—whether as a result of a failure to comply with applicable regulations or health authority expectations, the fragility of the production process, natural or man-made disasters at one of our facilities or at a critical supplier or vendor, or our failure to accurately predict demand—could have a material adverse effect on our business, financial condition or results of operations. See also "—Earthquakes and other natural disasters could adversely affect our business," below.

The persistently weak global economic and financial environment in many countries and increasing political and social instability may have a material adverse effect on our results.

Many of the world's largest economies and financial institutions continue to be impacted by a weak ongoing global economic and financial environment, with some continuing to face financial difficulty, liquidity problems and limited availability of credit. It is uncertain how long these effects will last, or whether economic and financial trends will worsen or improve. In addition, these issues may be further impacted by the unsettled political conditions currently existing in the US, Europe and other places. Such uncertain times may have a material adverse effect on our revenues, results of operations, financial condition and, if circumstances worsen, our ability to raise capital at reasonable rates. For example, persistent financial weakness in certain countries in Europe has increased pressures on those countries, and on payors in those countries, to force healthcare companies to decrease the prices at which we may sell them our products. See also "Item 4. Information on the Company—Item 4.B Business Overview—Pharmaceuticals—Price Controls." Concerns continue that payors in some countries, including Greece, Italy, Portugal and Spain, may not be able to pay us in a timely manner. Certain other countries, such as Venezuela have taken steps to introduce exchange controls and limit companies from distributing retained earnings or paying intercompany payables due from those countries. See also, "Item 5. Operating and Financial Review and Prospects—Item 5.B Liquidity and Capital Resources," "Item 18. Financial Statements—Notes 15 and 29."

Current economic conditions may adversely affect the ability of our distributors, customers, suppliers and service providers to obtain the liquidity required to pay for our products, or otherwise to buy necessary inventory or raw materials, and to perform their obligations under agreements with us, which could disrupt our operations, and could negatively impact our business and cash flow. Although we make efforts to monitor these third parties' financial condition and their liquidity, our ability to do so is limited, and some of them may become unable to pay their bills in a timely manner, or may even become insolvent, which could negatively impact our business and results of operations. These risks may be elevated with respect to our interactions with third parties with substantial operations in countries where current economic conditions are the most severe, particularly where such third parties are themselves exposed to payment risks from business interactions directly with fiscally-challenged government payers. See also "—Our reliance on outsourcing and third parties for the performance of key business functions heightens the risks faced by our businesses" below.

In addition, the varying effects of difficult economic times on the economies, currencies and financial markets of different countries has impacted, and may continue to unpredictably impact, the conversion of our operating results into our reporting currency, the US dollar, as well as the value of our investments in our pension plans. See "—Foreign exchange fluctuations may adversely affect our earnings and the value of some of our assets," below, and "—If any of numerous key assumptions and estimates in calculating our pension plan obligations turn out to be different from our actual experience, we may be required to increase substantially our contributions to pension plans as well as our pension-related costs in the future," below. In addition, the financial situation may also result in a lower return on our financial investments, and a lower value on some of our assets. Alternately, inflation could accelerate, which could lead to higher interest rates, which would increase our costs of raising capital.

To the extent that the economic and financial conditions directly affect consumers, some of our businesses, including the elective surgical business of our Alcon Division, may be particularly sensitive to declines in consumer spending. In addition, our Pharmaceuticals, Vaccines, and Sandoz Divisions, and the remaining businesses of our Alcon Division, may not be immune to consumer cutbacks, particularly given the increasing requirements in certain countries that patients pay a larger contribution toward their own healthcare costs. As a result, there is a risk that consumers may cut back on prescription drugs and vaccines, as well as consumer health products, to help cope with rising costs and difficult economic times.

At the same time, significant changes and volatility in the financial markets, in the consumer and business environment, in the competitive landscape and in the global political and security landscape make it increasingly difficult for us to predict our revenues and earnings into the future. As a result, any

revenue or earnings guidance or outlook which we have given or might give may be overtaken by events, or may otherwise turn out to be inaccurate. Though we endeavor to give reasonable estimates of future revenues and earnings at the time we give such guidance, based on then-current knowledge and conditions, there is a significant risk that such guidance or outlook will turn out to be, or to have been, incorrect.

In addition, increasing political and social instability around the world, including political instability and military action involving Russia, Ukraine and parts of the Middle East, the impacts of the Ebola crisis in western Africa, increased political and religious radicalism in many places, and increasing social unrest, including anti-immigrant activities in many countries may lead to significant business disruptions or other adverse business conditions. Similarly, increased scrutiny of corporate taxes and executive pay may lead to significant business disruptions or other adverse business conditions, and may interfere with our ability to attract and retain qualified personnel. See "—An inability to attract and retain qualified personnel could adversely affect our business" below.

Foreign exchange fluctuations may adversely affect our earnings and the value of some of our assets.

Changes in exchange rates between the US dollar, our reporting currency, and other currencies can result in significant increases or decreases in our reported sales, costs and earnings as expressed in US dollars, and in the reported value of our assets, liabilities and cash flows. This in turn may significantly affect the comparability of period-to-period results of operations. In 2014, the US dollar significantly increased in value against most currencies. In particular, the average value of the Japanese yen and emerging market currencies (especially the ruble) decreased in 2014 against the US dollar. However, in January 2015, following an announcement by the Swiss National Bank that it was discontinuing its minimum exchange rate with the euro, the value of the Swiss franc increased substantially. Because a significant portion of our earnings and expenditures are in currencies other than the US dollar, including expenditures in Swiss francs that are significantly higher than our revenues in Swiss francs, such exchange rate volatility can have a significant impact on the reported value of our net sales, earnings, assets and liabilities, and the timing and extent of such volatility can be difficult to predict.

In addition, there is a risk that certain countries could take other steps which could significantly impact the value of their currencies. Such steps could include "quantitative easing" measures, potential withdrawals by countries from common currencies or the setting of exchange controls, as Venezuela did. Should such steps significantly change the value of a country's currency, then this could impact the value in US dollars of our sales and earnings in such countries, as well as the currency translation adjustments included in our consolidated equity. For more information on the effects of currency fluctuations on our consolidated financial statements and on how we manage currency risk, see "Item 5. Operating and Financial Review and Prospects—Item 5.B Liquidity and Capital Resources—Effects of Currency Fluctuations" "Item 11. Quantitative and Qualitative Disclosures about Market Risk", and "Item 18. Financial Statements—Note 29."

We may not successfully achieve our goals in strategic transactions or reorganizations, including the portfolio transformation transactions and the formation of Novartis Business Services.

As part of our strategy, from time to time we evaluate and pursue potential strategic business acquisitions and divestitures to expand or complement our existing businesses, or to enable us to focus more sharply on our strategic businesses. We cannot ensure that suitable acquisition candidates will be identified. Acquisition activities can be thwarted by overtures from competitors for the targeted assets, potentially increasing prices demanded by sellers, governmental regulation (including market concentration limitations) and replacement product developments in our industry. Once an acquisition is agreed upon with a third party, we may not be able to complete the acquisition in the expected form or within the expected time frame, or at all, due to a failure to obtain required regulatory approvals or a failure to achieve contractual or other required closing conditions. Further, after an acquisition, efforts to integrate the business may not meet expectations, or may otherwise not be successful, as a result of

corporate cultural differences, difficulties in retention of key personnel, customers and suppliers, coordination with other products and processes, or other reasons. Also, acquisitions and divestments could divert management's attention from our existing businesses, and could result in the existing businesses failing to achieve expected results, or in liabilities being incurred that were not known at the time of acquisition, or the creation of tax or accounting issues. Similarly, we cannot ensure that suitable buyers will be identified for businesses or other assets that we might want to divest. Neither can we ensure that we will correctly select businesses or assets as candidates for divestiture, that we will be able to successfully complete any agreed upon divestments, or that any expected strategic benefits, synergies or opportunities will arise as a result of any divestiture.

On April 22, 2014, we announced that we had reached definitive agreements with GSK and Lilly on a set of transactions intended to transform our portfolio of businesses. In a series of inter-conditional transactions with GSK, Novartis agreed to: (1) acquire GSK oncology products and certain related assets, and was granted a right of first negotiation over the co-development or commercialization of GSK's current and future oncology R&D pipeline, excluding oncology vaccines; (2) create a joint venture with GSK in consumer healthcare, in which Novartis would own 36.5%; and (3) divest its Vaccines Division (excluding the influenza vaccines business) to GSK. In addition, Novartis agreed to divest its Animal Health Division to Lilly. Subsequently, on October 26, 2014, we announced that we had entered into a definitive agreement to divest our influenza vaccines business to CSL.

The transaction with Lilly closed on January 1, 2015. All of the remaining transactions are subject to closing conditions, including regulatory approvals. In addition, the transactions with GSK are inter-conditional. The transactions with GSK are expected to close in the first half of 2015 and the transaction with CSL is expected to close in the second half of 2015.

Because of the need for external approvals and certain other contingencies, the proposed transactions may not be completed in the expected form or within the expected time frame, or at all. If the transactions are completed, then certain milestone and royalty payments may be owed if certain conditions are met. But because of the uncertainties involved, we cannot ensure that any such payments will be made either by us or to us. In addition, in agreeing to these transactions, we expected to achieve certain strategic benefits, synergies and opportunities, including certain financial results, but such expected benefits may never be fully realized or may take longer to realize than expected. With respect to the acquisition of the GSK oncology products and related assets, we cannot be certain that the GSK business will be successfully integrated with ours and that key personnel will be retained. Disruption from these transactions may make it more difficult to maintain relationships with customers, employees or suppliers. Lastly, extensive preparations are needed to complete these transactions, as well as the integration and de-integration of the respective businesses, requiring substantial attention from our management. This diversion of management's attention away from our continuing businesses could result in the continuing businesses failing to achieve expected financial or other results, or in liabilities being incurred that were not known at the time of the transactions, or the creation of tax or accounting issues.

In addition, in April 2014, we announced the creation of a shared services organization, Novartis Business Services (NBS), which became effective on July 1, 2014. NBS consolidated a number of business support services previously spread across divisions, including Information Technology, Financial Reporting and Accounting Operations, Real Estate & Facility Services, Procurement, Payroll and Personnel Administration and the Pharmaceuticals Global Business Services. This reorganization was designed to improve profitability and free up resources that could be reinvested in growth and innovation, and to allow our divisions to focus more on customer-facing activities. But the expected benefits of this reorganization may never be fully realized or may take longer to realize than expected. There can be no certainty that the numerous business functions involved will be successfully integrated into a single organization and that key personnel will be retained. Disruption from the reorganization may make it more difficult to maintain relationships with customers, employees or suppliers.

Both with respect to the transactions and reorganizations previously announced, and to potential future transactions and reorganizations, if we fail to timely recognize or address these risks, or to devote

adequate resources to them, we may fail to achieve our strategic objectives, including our growth strategy, or otherwise may not realize the intended benefits of the acquisition, divestiture or reorganization.

Intangible assets and goodwill on our books may lead to significant impairment charges in the future.

The amount of goodwill and other intangible assets on our consolidated balance sheet has increased significantly in recent years, primarily due to acquisitions. As a result, impairment testing could lead to material impairment charges in the future.

We regularly review our long-lived intangible and tangible assets, including identifiable intangible assets, investments in associated companies and goodwill, for impairment. Goodwill, acquired research and development, and acquired development projects not yet ready for use are subject to impairment review at least annually. Other long-lived assets are reviewed for impairment when there is an indication that an impairment may have occurred. Impairment testing under IFRS may lead to impairment charges in the future. Any significant impairment charges could have a material adverse effect on our results of operations and financial condition. In 2014, for example, we recorded intangible asset and goodwill impairment charges of $752 million. Of this, $334 million was recorded on the announcement of the sale of our influenza vaccines business to CSL. For a detailed discussion of how we determine whether an impairment has occurred, what factors could result in an impairment and the increasing impact of impairment charges on our results of operations, see "Item 5. Operating and Financial Review and Prospects—Item 5.A Operating Results—Critical Accounting Policies and Estimates—Impairment of Goodwill, Intangible Assets and Property, Plant and Equipment" and "Item 18. Financial Statements—Notes 1 and 11."

Our indebtedness could adversely affect our operations.

As of December 31, 2014 we had $13.8 billion of non-current financial debt and $6.6 billion of current financial debt. Our current and long-term debt requires us to dedicate a portion of our cash flow to service interest and principal payments and may limit our ability to engage in other transactions and otherwise may place us at a competitive disadvantage relative to our competitors that have less debt. We may have difficulty refinancing our existing debt or incurring new debt on terms that we would consider to be commercially reasonable, if at all.

Our reliance on outsourcing and third parties for the performance of key business functions heightens the risks faced by our businesses.

We invest a significant amount of effort and resources into outsourcing and offshoring certain key business functions with third parties, including research and development collaborations, manufacturing operations, warehousing, distribution activities, certain finance functions, marketing activities, data management and others. Our reliance on outsourcing and third parties for certain functions, such as the research and development or manufacturing of products, may limit the potential profitability of such products. In addition, despite contractual relationships with the third parties to whom we outsource these functions, we cannot ultimately control how they perform their contracts. Nonetheless, we depend on these third parties to achieve results which may be significant to us. If the third parties fail to meet their obligations or to comply with the law, we may lose our investment in the collaborations and fail to receive the expected benefits. In addition, should any of these third parties fail to comply with the law in the course of their performance of services for us, there is a risk that we could be held responsible for such violations of law, as well. Any such failures by third parties could have a material adverse effect on our business, financial condition or results of operations.

In particular, in many countries, including many developing markets, we rely heavily on third party distributors and other agents for the marketing and distribution of our products. Many of these third parties do not have internal compliance resources comparable to those within our organization. Some of these countries are plagued by corruption. If our efforts to screen our third party agents and detect cases of potential misconduct fail, we could be held responsible for the noncompliance of these third parties

with applicable laws and regulations, which may have a material adverse effect on our reputation and on our business, financial condition or results of operations.

We may not be able to realize the expected benefits of our significant investments in Emerging Growth Markets.

At a time of slowing growth in sales of healthcare products in industrialized countries, many emerging markets have experienced proportionately higher sales growth and an increasing contribution to the industry's global performance. In 2014, we generated $15.3 billion, or approximately 26% (2013: 26%) of our net sales from Emerging Growth Markets—which comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand—as compared with $42.7 billion, or approximately 74% (2013: 74%) of our net sales, in the Established Markets. However, combined net sales in the Emerging Growth Markets grew 11% in constant currencies in 2014, compared to 1% sales growth in constant currencies in the Established Markets during the same period. As a result of this trend, we have been taking steps to increase our activities in the Emerging Growth Markets, and have been making significant investments in our businesses in those countries.

There is no guarantee that our efforts to expand our sales in these countries will succeed, or that these countries will continue to experience growth rates in excess of the world's largest markets. Some Emerging Growth Market countries may be especially vulnerable to the effects of the persistently weak global financial environment, may have very limited resources to spend on healthcare or are more susceptible to political and social instability. See "—The persistently weak global economic and financial environment in many countries may have a material adverse effect on our results" above. Many of these countries are subject to increasing political and social pressures, including from a growing middle class seeking increased access to healthcare. Such pressures on local government may in turn result in an increased focus by the governments on our pricing, and may put at risk our intellectual property.

These countries also may have a relatively limited number of persons with the skills and training suitable for employment at an enterprise such as ours. See "—An inability to attract and retain qualified personnel could adversely affect our business" below. In some Emerging Growth Market countries, a culture of compliance with law may not be as fully developed as in the Established Markets—China's investigations of the activities of multinational healthcare companies have been well publicized—or we may be required to rely on third-party agents, in either case putting us at risk of liability. See "—Failure to comply with law, and resulting investigations and legal proceedings may have a significant negative effect on our results of operations," and "—Our reliance on outsourcing and third parties for the performance of key business functions heightens the risks faced by our businesses," above.

In addition, many of these countries have currencies that may fluctuate substantially. If these currencies devalue significantly against the US dollar, and we cannot offset the devaluations with price increases, then our products may become less profitable, or may otherwise impact our reported financial results. See "—Foreign exchange fluctuations may adversely affect our earnings and the value of some of our assets," above.

For all these reasons, our sales to Emerging Growth Markets carry significant risks. A failure to continue to expand our business in Emerging Growth Markets could have a material adverse effect on our business, financial condition or results of operations.

Failure to obtain marketing exclusivity periods for new generic products, or to develop differentiated products, as well as intense competition from patented and generic pharmaceuticals companies, may have an adverse effect on the success of our Sandoz Division.

Our Sandoz Division achieves significant revenue opportunities when it secures and maintains exclusivity periods granted for generic products in certain markets—particularly the 180-day exclusivity period granted in the US by the Hatch-Waxman Act for first-to-file generics—and when it is able to develop differentiated products with few, if any, generic competitors. Failure to obtain and maintain these market opportunities could have an adverse effect on the success of Sandoz. In addition, the division faces

intense competition from companies that market patented pharmaceutical products, which sometimes take aggressive steps to prevent or delay the introduction of generic medicines, to limit the availability of exclusivity periods or to reduce their value, and from other generic pharmaceuticals companies, which aggressively compete for exclusivity periods and for market share of generic products that may be identical to certain of our generic products. These activities may increase the costs and risks associated with our efforts to introduce generic products and may delay or entirely prevent their introduction. See also "—Our research and development efforts may not succeed in bringing new products to market, or may fail to do so cost-efficiently enough, or in a manner sufficient to grow our business and replace lost revenues and income" above, with regard to the risks involved in our efforts to develop differentiated generic products.

If any of numerous key assumptions and estimates in calculating our pension plan obligations turn out to be different from our actual experience, we may be required to increase substantially our contributions to pension plans as well as the amount we pay toward pension-related expenses in the future.

We sponsor pension and other post-employment benefit plans in various forms. These plans cover a significant portion of our current and former associates. We are required to make significant assumptions and estimates about future events in calculating the present value of expected future expenses and liabilities related to these plans. These include assumptions about discount rates we apply to estimated future liabilities and rates of future compensation increases. In addition, our actuarial consultants provide our management with historical statistical information such as withdrawal and mortality rates in connection with these estimates. Assumptions and estimates used by Novartis may differ materially from the actual results we experience due to changing market and economic conditions (including the effects of the persistently weak global financial environment, which, to date, have resulted in extremely low interest rates in many countries), higher or lower withdrawal rates, or longer or shorter life spans of participants, among other variables. For example, a decrease in the interest rate we apply in determining the present value of expected future defined benefit obligations of one-quarter of one percent would have increased our year-end defined benefit pension obligation for plans in Switzerland, US, UK, Germany and Japan, which represent about 95% of the Group total defined benefit pension obligation, by $0.8 billion. Any differences between our assumptions and estimates and our actual experience could have a material effect on our results of operations and financial condition. Further, additional employer contributions might be required if plan funding falls below the levels required by local rules. For more information on obligations under retirement and other post-employment benefit plans and underlying actuarial assumptions, see "Item 5. Operating and Financial Review and Prospects—Item 5.A Operating Results—Critical Accounting Policies and Estimates—Retirement and other post-employment benefit plans" and "Item 18. Financial Statements—Note 25". See also "—The persistently weak global economic and financial environment in many countries may have a material adverse effect on our results" above.

Changes in tax laws or their application could adversely affect our results of operations.

The integrated nature of our worldwide operations enables us to achieve an attractive effective tax rate on our earnings because a portion of our earnings are earned in jurisdictions which tax profits at more favorable rates. Changes in tax laws or in the laws' application, including with respect to tax base or rate, transfer pricing, intercompany dividends and cross-border transactions, controlled corporations, and limitations on tax relief allowed on the interest on intercompany debt, could increase our effective tax rate and adversely affect our financial results.

Counterfeit versions of our products could harm our patients and reputation.

Our industry continues to be challenged by the vulnerability of distribution channels to illegal counterfeiting and the presence of counterfeit products in a growing number of markets and over the Internet. Counterfeit products are frequently unsafe or ineffective, and can potentially be life-threatening. To distributors and patients, counterfeit products may be visually indistinguishable from the authentic version. Reports of adverse reactions to counterfeit drugs or increased levels of counterfeiting could

materially affect patient confidence in the authentic product, and harm the business of companies such as ours or lead to litigation. Additionally, it is possible that adverse events caused by unsafe counterfeit products would mistakenly be attributed to the authentic product. If a product of ours was the subject of counterfeits, we could incur substantial reputational and financial harm.

Ongoing consolidation among our distributors and retailers is increasing both the purchasing leverage of key customers and the concentration of credit risk.

Increasingly, a significant portion of our global sales are made to a relatively small number of US drug wholesalers, retail chains and other purchasing organizations. For example, our three most important customers globally are all in the US, and accounted for approximately 15%, 13% and 6%, respectively, of Group net sales in 2014. The largest trade receivables outstanding were for these three customers, amounting to 11%, 8% and 4%, respectively, of the Group's trade receivables at December 31, 2014. The trend has been toward further consolidation among distributors and retailers, both in the US and internationally. As a result, our customers are gaining additional purchasing leverage, which increases the pricing pressures facing our businesses. Moreover, we are exposed to a concentration of credit risk as a result of this concentration among our customers. If one or more of our major customers experienced financial difficulties, the effect on us would be substantially greater than in the past. This could have a material adverse effect on our business, financial condition and results of operations.

An inability to attract and retain qualified personnel could adversely affect our business.

We highly depend upon skilled personnel in key parts of our organization, and we invest heavily in recruiting, training and retaining qualified individuals. The loss of the service of key members of our organization—including senior members of our scientific and management teams, high-quality researchers and development specialists, and skilled personnel in emerging markets—could delay or prevent the achievement of major business objectives.

Future economic growth will demand talented associates and leaders, yet the market for talent has become increasingly competitive. Shifting demographic trends are expected to result in fewer students, fewer graduates and fewer people entering the workforce in the Western world in the next 10 years. The supply of talent for key functional and leadership positions is decreasing, and a talent gap is clearly visible for some professions and geographies—engineers in Germany, for example. Recruitment is increasingly regional or global in specialized fields such as clinical development, biosciences, chemistry and information technology.

Emerging markets are expected to be a driving force in global growth, but in countries like Russia and China there is a limited pool of executives with the training and international experience needed to work successfully in a global organization like Novartis. Moreover, many members of younger generations around the world have changing expectations toward careers, engagement and the integration of work in their overall lifestyles. Geographic mobility is expected to decrease, and talented individuals in emerging countries anticipate ample career opportunities closer to home than in the past.

In addition, our ability to hire qualified personnel also depends on the flexibility to reward superior performance and to pay competitive compensation. Laws and regulations on executive compensation, including legislation in our home country, Switzerland, may restrict our ability to attract, motivate and retain the required level of qualified personnel.

We face intense competition for an increasingly limited pool of qualified individuals from numerous pharmaceutical and biotechnology companies, universities, governmental entities, other research institutions, other companies seeking to enter the healthcare space and companies in other industries. As a result, we may be unable to attract and retain qualified individuals in sufficient numbers, which could have an adverse effect on our business, financial condition and results of operations.

Significant breaches of data security or disruptions of information technology systems could adversely affect our business.

Our business is heavily dependent on critical, complex and interdependent information technology systems, including Internet-based systems, to support business processes as well as internal and external communications. The size and complexity of these systems make them potentially vulnerable to breakdown, malicious intrusion, malware and other cyber-attacks. While we have invested heavily in the protection of our data and information technology, we may not be able to prevent breakdowns or breaches in our systems that could adversely affect our business.

Any such events could negatively impact important business processes such as the conduct of scientific research and clinical trials, the submission of the results of such efforts to health authorities in support of requests for product approvals, the functioning of our manufacturing and supply chain processes, our compliance with legal obligations and other key business activities. In addition, such potential information technology issues could lead to the loss of important information such as trade secrets or other intellectual property, or personal information (including sensitive personal information) of our employees, clinical trial patients, vendors, customers, collaborators and others, or could expose such important information to unauthorized persons. We also manufacture and sell a number of devices that make significant use of information technology, including our Alcon surgical equipment. Malfunctions in such technology could lead to a risk of harm to patients.

Any such breaches of data security or information technology disruptions could have a material adverse effect on our business, financial condition and results of operations.

Increasing use of social media and mobile technologies could give rise to liability or breaches of data security.

Novartis and our associates are increasingly relying on social media tools and mobile technologies as a means of communications. To the extent that we seek as a company to use these tools as a means to communicate about our products or about the diseases our products are intended to treat, there are significant uncertainties as to the rules that apply to such communications, and as to the interpretations that health authorities will apply to the rules that exist. As a result, despite our efforts to comply with applicable rules, there is a significant risk that our use of social media and mobile technologies for such purposes may cause us to nonetheless be found in violation of them. In addition, because of the universal availability of social media tools and mobile technologies, our associates may use them in ways that may not be sanctioned by the company, and which may give rise to liability, or which could lead to the loss of trade secrets or other intellectual property, or could lead to the public exposure of personal information (including sensitive personal information) of our employees, clinical trial patients, customers and others. Such uses of social media and mobile technologies could have a material adverse effect on our business, reputation, financial condition and results of operations.

Environmental liabilities may adversely impact our results of operations.

The environmental laws of various jurisdictions impose actual and potential obligations on us to remediate contaminated sites. While we have set aside substantial provisions for worldwide environmental liabilities, there is no guarantee that additional costs will not be incurred beyond the amounts for which we have provided in the Group consolidated financial statements. If we are required to further increase our provisions for environmental liabilities in the future, or if we fail to properly manage the safety of our facilities and the environmental risks, this could have a material adverse effect on our business, financial condition and results of operations. For more detail regarding environmental matters, see "Item 4.D Property, Plants and Equipment—Environmental Matters" and "Item 18. Financial Statements—Note 20."

Earthquakes and other natural disasters could adversely affect our business.

In recent years, extreme weather events and changing weather patterns such as storms, flooding, drought, and temperature changes, appear to have become more common. We operate in countries around the world. As a result, we are potentially exposed to varying natural disaster risks like hurricanes, tornadoes or floods. As a result of these and other potential impacts of climate change on the environment, we could experience business interruptions, destruction of facilities and loss of life, all of which could have a material adverse effect on our business, financial condition and results of operations could be put at risk.

Our corporate headquarters, the headquarters of our Pharmaceuticals Division, and certain of our major Pharmaceuticals Division production and research facilities are located near earthquake fault lines in Basel, Switzerland. In addition, other major facilities of several divisions are located near major earthquake fault lines in various locations around the world. In the event of a major earthquake, we could experience business interruptions, destruction of facilities and loss of life, all of which could have a material adverse effect on our business, financial condition and results of operations. See also "—The manufacture of our products is highly regulated and complex, and may result in a variety of issues that could lead to extended supply disruptions and significant liability," above.

Risks Related To Our ADRs

The price of our ADRs and the US dollar value of any dividends may be negatively affected by fluctuations in the US dollar/Swiss franc exchange rate.

Our American Depositary Shares (ADSs) each representing one Novartis share and evidenced by American Depositary Receipts (ADRs) trade on the NYSE in US dollars. Since the shares underlying the ADRs are listed in Switzerland on the SIX Swiss Exchange (SIX) and trade in Swiss francs, the value of the ADRs may be affected by fluctuations in the US dollar/Swiss franc exchange rate. In addition, since dividends that we may declare will be denominated in Swiss francs, exchange rate fluctuations will affect the US dollar equivalent of dividends received by holders of ADRs. If the value of the Swiss franc decreases against the US dollar, the price at which our ADRs trade may—and the value of the US dollar equivalent of any dividend will—decrease accordingly.

Holders of ADRs may not be able to exercise preemptive rights attached to shares underlying ADRs.

Under Swiss law, shareholders have preemptive rights to subscribe for issuances of new shares on a *pro rata* basis. Shareholders may waive their preemptive rights in respect of any offering at a general meeting of shareholders. Preemptive rights, if not previously waived, are transferable during the subscription period relating to a particular offering of shares and may be quoted on the SIX. US holders of ADRs may not be able to exercise the preemptive rights attached to the shares underlying their ADRs unless a registration statement under the US Securities Act of 1933 is effective with respect to such rights and the related shares, or an exemption from this registration requirement is available. In deciding whether to file such a registration statement, we would evaluate the related costs and potential liabilities, as well as the benefits of enabling the exercise by ADR holders of the preemptive rights associated with the shares underlying their ADRs. We cannot guarantee that a registration statement would be filed, or, if filed, that it would be declared effective. If preemptive rights could not be exercised by an ADR holder, JPMorgan Chase Bank, N.A., as depositary, would, if possible, sell the holder's preemptive rights and distribute the net proceeds of the sale to the holder. If the depositary determines, in its discretion, that the rights could not be sold, the depositary might allow such rights to lapse. In either case, the interest of ADR holders in Novartis would be diluted and, if the depositary allowed rights to lapse, holders of ADRs would not realize any value from the preemptive rights.

Item 4. Information on the Company

4.A History and Development of Novartis

Novartis AG

Novartis AG was incorporated on February 29, 1996 under the laws of Switzerland as a stock corporation (*Aktiengesellschaft*) with an indefinite duration. On December 20, 1996, our predecessor companies, Ciba-Geigy AG and Sandoz AG, merged into this new entity, creating Novartis. We are domiciled in and governed by the laws of Switzerland. Our registered office is located at the following address:

Novartis AG
Lichtstrasse 35
CH-4056 Basel, Switzerland
Telephone: 011-41-61-324-1111
Web: www.novartis.com

Novartis is a multinational group of companies specializing in the research, development, manufacturing and marketing of a broad range of healthcare products led by innovative pharmaceuticals. Novartis AG, our Swiss holding company, owns, directly or indirectly, all of our significant operating companies. For a list of our significant operating subsidiaries, see "Item 18. Financial Statements—Note 32."

Important Corporate Developments 2012-2014

2014

October	Novartis announces a definitive agreement with CSL of Australia to divest its influenza vaccines business for $275 million.
	Novartis announces changes to the Novartis Executive Committee. Three members of the Executive Committee of Novartis, George Gunn, Brian MacNamara and Andrin Oswald, would leave the Company following the completion of the relevant portfolio transactions announced in April 2014, and expected to close in the first half of 2015.
	Novartis announces that it has entered into a collaboration with Bristol-Myers Squibb Company to evaluate three molecularly targeted compounds in combination with Bristol-Myers Squibb's investigational PD-1 immune checkpoint inhibitor, Opdivo® (nivolumab), in Phase I/II trials of patients with non-small cell lung cancer.
August	Novartis appoints a Chief Ethics, Compliance and Policy Officer reporting directly to the CEO.
July	Novartis announces that its Alcon Division has entered into an agreement with a division of Google Inc., to in-license its "smart lens" technology for all ocular medical uses.
June	Novartis announces that the FDA licensed its manufacturing facility in Holly Springs, North Carolina for the commercial production of cell-culture influenza vaccines, with the capacity to significantly increase production in the event of an influenza pandemic.
May	Novartis enters into a licensing and commercialization agreement with Ophthotech Corporation for the exclusive rights to market *Fovista* (OAP030, anti-PDGF aptamer) outside the US.

April — Novartis announces a set of definitive inter-conditional agreements with GSK. Under these agreements, Novartis would acquire GSK oncology products and certain related assets, would be granted a right of first negotiation over the co-development or commercialization of GSK's current and future oncology R&D pipeline (excluding oncology vaccines) and would divest the Vaccines Division (excluding its influenza vaccines business) to GSK. The two companies would also create a joint venture in consumer healthcare, of which Novartis would own 36.5%.

Novartis also announces a definitive agreement with Lilly to divest the Company's Animal Health Division. This divestment was completed on January 1, 2015.

Novartis announces the creation of a shared services organization, Novartis Business Services (NBS). NBS consolidates a number of business support services previously spread across divisions, including Information Technology, Financial Reporting and Accounting Operations, Real Estate & Facility Services, Procurement, Payroll and Personnel Administration and the Pharmaceuticals Global Business Services. This reorganization was designed to improve profitability and free up resources that could be reinvested in growth and innovation, and to allow our divisions to focus more on customer-facing activities. NBS became effective on July 1, 2014.

February — Novartis announces the acquisition of CoStim Pharmaceuticals Inc., a Cambridge, Massachusetts-based, privately held biotechnology company focused on cancer immunotherapy. The acquisition brings to Novartis late discovery stage immunotherapy programs directed to several targets, including PD-1.

Novartis appoints a Global Head, Corporate Responsibility reporting directly to the CEO.

January — Novartis implements several changes to its governance structure. These include elimination of the Chairman's Committee of the Novartis AG Board of Directors; transfer of operational responsibilities that previously rested with the Chairman or the Chairman's Committee, such as approval authority for management compensation, to the CEO or the Executive Committee; and establishment of the Research and Development Committee of the Novartis AG Board of Directors to oversee Novartis research and development strategy and advise the Board on scientific trends and activities.

2013

November — Novartis announces a $5.0 billion share buyback. The buyback begins on the date of the announcement and will be executed over two years on the second trading line.

Novartis announces a definitive agreement to divest its blood transfusion diagnostics unit to Grifols S.A. of Spain, for $1.7 billion. This transaction was completed in January 2014.

Novartis announces that it will co-locate certain scientific resources in order to improve the efficiency and effectiveness of its global research organization. Changes include establishing a respiratory research group in Cambridge, Massachusetts, a proposal to close the Horsham, UK, research site, a plan to exit from the Vienna, Austria research site, consolidation of the US-based component of oncology research from Emeryville, California to Cambridge, Massachusetts, closure of the biotherapeutics development unit in La Jolla, California, and a plan to exit research in topical applications for dermatology.

September — Novartis announces that it has entered into an exclusive global licensing and research collaboration agreement with Regenerex LLC, a biopharmaceutical company based in Louisville, Kentucky, for use of the company's novel Facilitating Cell Therapy (FCRx) platform.

August — Joerg Reinhardt, Ph.D., assumes role of Chairman of the Board of Directors of Novartis AG on August 1.

July — The Novartis Board of Directors announces a final agreement with its former Chairman, Dr. Daniel Vasella. From the date of the Annual General Meeting held on February 22, 2013, until October 31, 2013, Dr. Vasella was to provide certain transitional services, including select Board mandates with subsidiaries of Novartis and support of the ad-interim Chairman and the new Chairman. For his transitional services during such period, Dr. Vasella would receive cash of CHF 2.7 million, and 31,724 unrestricted shares as of October 31, 2013 (the market value of the shares as of the date of the announcement was approximately CHF 2.2 million). In addition, from November 1, 2013, to December 31, 2016, Dr. Vasella will receive a minimum of $250,000 per annum in exchange for making himself available to Novartis, at Novartis' request and discretion, to provide specific consulting services, such as the coaching of high-potential associates of Novartis and speeches at key Novartis events at a daily fee rate of $25,000, which will be offset against the $250,000 minimum annual payment. During November and December 2013, Dr. Vasella did not provide any coaching to associates and did not receive any compensation for this period.

Novartis announces that it has entered into a development and licensing agreement with Biological E Limited (BioE), a biopharmaceutical company based in India, for two vaccines to protect against typhoid and paratyphoid fevers. The agreement advances the Novartis goal to deliver accessible and affordable vaccines that address unmet medical need in endemic regions.

April — Novartis and Malaria No More, a leading global charity determined to end malaria deaths, announce that they are joining forces on the Power of One campaign to help close the treatment gap and accelerate progress in the fight against malaria. Over the next three years, Novartis will support the campaign financially and also donate up to three million full courses of its pediatric antimalarial drug to match the treatments donated by the public, doubling the impact of these donations.

February — Novartis announces that the Novartis AG Board of Directors and Dr. Vasella agreed to cancel his non-competition agreement and all related conditional compensation. The agreement was to take effect after Dr. Vasella stepped down as Chairman of the Board at the Novartis Annual General Meeting on February 22, 2013.

January — Novartis announces that, at his own wish, Novartis AG Chairman of the Board of Directors Dr. Daniel Vasella will not stand for re-election as a member of the Board of Directors at the Annual General Meeting to be held on February 22, 2013. The Board of Directors proposed the election of, among others, Joerg Reinhardt, Ph.D., as a member of the Board for a term of office beginning on August 1, 2013, and ending on the day of the Annual General Meeting in 2016. The Board announced its intention to elect Joerg Reinhardt as Chairman of the Board of Directors as from August 1, 2013. The Board of Directors further announced its intention to elect its current Vice-Chairman, Ulrich Lehner, Ph.D., as Chairman of the Board of Directors for the period from February 22, 2013, until the new Chairman took office.

2012

September — Novartis successfully completes a $2.0 billion bond offering in two tranches.

August — Novartis and the University of Pennsylvania (Penn) form a broad-based Research & Development alliance to advance novel T-cell immunotherapies to treat cancer. Novartis and Penn enter into a multi-year collaboration to study chimeric antigen receptor (CAR) technology for the treatment of cancer. The parties establish a joint Center for Advanced Cellular Therapies at Penn to develop and manufacture CARs. Novartis licenses worldwide rights to the first CAR investigational therapy, CART-19, from Penn, and obtains worldwide commercial rights to products from the collaboration. Novartis will provide an up-front payment to Penn, research funding, funding for the establishment of the CACT and milestone payments for the achievement of certain clinical, regulatory and commercial milestones and royalty payments.

May	Sandoz announces an agreement to acquire Fougera Pharmaceuticals, based in Melville, New York, for $1.525 billion, to make Sandoz the number one generic dermatology medicines company globally and in the US, and to strengthen Sandoz's differentiated products strategy. The acquisition was completed in July 2012.
March	Alcon gains exclusive rights outside the US to ocriplasmin, a potential first pharmacological treatment for vitreomacular adhesion. Alcon pays ThromboGenics an upfront payment of EUR 75 million, with potential additional payments based on milestones, and on royalties on sales.
January	Novartis extends its commitment to help achieve the final elimination of leprosy. Our new five-year commitment includes a donation of treatments worth an estimated $22.5 million, and is expected to reach an estimated 850,000 patients. Novartis will also intensify efforts to build a multi-stakeholder initiative in a final push against leprosy. We have a long history in fighting leprosy, donating medicines and developing programs to support patients, valued at more than $100 million since 1986.
	Novartis announces the restructuring of its US Pharmaceuticals business to strengthen its competitive position in light of the loss of patent protection for *Diovan* and the expected impact on the worldwide sales of *Tekturna*/*Rasilez* after the termination of the ALTITUDE study. The restructuring of the US General Medicines business results in a reduction of 1,960 positions and leads to an exceptional charge of $160 million in the first quarter of 2012 and to expected annual savings of approximately $450 million by 2013.

For information on our principal expenditures on property, plants and equipment, see "Item 4. Information on the Company—4.D Property, Plants and Equipment." For information on our significant investments in research and development, see the sections headed "Research and Development" included in the descriptions of our operating divisions under "Item 4. Information on the Company—4.B Business Overview." For information on other principal capital expenditures and divestitures, see "Item 5. Operating and Financial Review and Prospects—Item 5.A Operating Results—Factors Affecting Comparability of the Year-On-Year Results of Operations—Recent Significant Transactions." For more information on the proposed transactions with GSK, the proposed transaction with CSL, or the completed transaction with Lilly, see "Item 4.B Business Overview—Overview" and "Item 10.C Material Contracts."

4.B Business Overview

OVERVIEW

Novartis provides healthcare solutions that address the evolving needs of patients and societies worldwide. Our broad portfolio includes innovative medicines, eye care, cost-saving generic pharmaceuticals, preventive vaccines and over-the-counter products.

On April 22, 2014, Novartis announced that it had reached definitive agreements with GSK and Lilly on a set of transactions intended to transform our portfolio of businesses.

In inter-conditional transactions with GSK, Novartis agreed to: (1) acquire GSK oncology products and certain related assets, and was granted a right of first negotiation over the co-development or commercialization of GSK's current and future oncology R&D pipeline, excluding oncology vaccines; (2) create a joint venture with GSK in consumer healthcare by combining the Novartis OTC Division with the GSK consumer healthcare business, of which Novartis would own 36.5% and would have four of eleven seats on the joint venture's Board; and (3) divest the Vaccines Division (excluding the influenza vaccines business) to GSK. In addition, Novartis agreed to divest the Animal Health Division to Lilly. The divestment of our Animal Health Division to Lilly was completed on January 1, 2015.

On October 26, 2014, Novartis announced that it had reached a definitive agreement with CSL of Australia to divest its influenza vaccines business for $275 million.

The transactions with GSK and CSL are subject to closing conditions and regulatory approvals. The transactions with GSK are expected to close in the first half of 2015, and the transaction with CSL is expected to close in the second half of 2015.

The Group's wholly-owned businesses are organized into five global operating divisions, and we report our results in the following five segments. In addition, we separately report Corporate activities. Following the announcement of the transactions with GSK and Lilly, in order to comply with IFRS, Novartis has separated the Group's reported financial data for the current and prior year into "continuing" operations and "discontinuing" operations:

Continuing Operations:

- Pharmaceuticals: Innovative patent-protected prescription medicines
- Alcon: Surgical, ophthalmic pharmaceutical and vision care products
- Sandoz: Generic pharmaceuticals
- Corporate activities

Discontinuing Operations:

- Vaccines: Preventive human vaccines and the blood transfusion diagnostics unit, which was divested on January 9, 2014
- Consumer Health: OTC (over-the-counter medicines) (following the January 1, 2015 completion of the divestment of our Animal Health Division to Lilly, the Consumer Health segment now consists only of the OTC Division)
- Corporate: certain transactional and other expenses related to the portfolio transformation

Novartis has leading positions globally in each of the three areas of our continuing operations. To maintain our competitive positioning across these growing segments of the healthcare industry, we place a strong focus on innovating to meet the evolving needs of patients around the world, growing our presence in new and emerging markets, and enhancing our productivity to invest for the future and increase returns to shareholders.

We separately report the financial results of our Corporate activities as part of our Continuing Operations. Income and expenses relating to Corporate include the costs of the Group headquarters and those of corporate coordination functions in major countries. In addition, Corporate includes other items of income and expense which are not attributable to specific segments such as certain expenses related to post-employment benefits, environmental remediation liabilities, charitable activities, donations and sponsorships.

Our divisions are supported by Novartis Business Services and the Novartis Institutes for BioMedical Research.

- Novartis Business Services (NBS) was launched in July 2014 with the transfer of over 7,000 associates, and organizational structures are being implemented to start operations in January 2015 as a shared services organization. NBS is designed to enhance profitability by harmonizing high-quality services at better price across the Group and Divisions. It covers approximately $6 billion in expenses, and synergies generated by the organization are expected to improve margin over time.
- The Novartis Institutes for BioMedical Research (NIBR) was created in 2003, and is headquartered in Cambridge, Massachusetts. More than 5,900 scientists and associates at NIBR conduct research into various disease areas at sites located in the US, Switzerland, UK, Italy, Singapore and China. For more information about NIBR, see "—Pharmaceuticals—Research and Development—Research program," below.

Novartis achieved net sales of $58.0 billion in 2014, while net income amounted to $10.3 billion. Research & Development expenditure in 2014 amounted to $9.9 billion ($9.6 billion excluding impairment and amortization charges). Of the Group's total net sales, $15.3 billion, or 26%, came from Emerging Growth Markets, and $42.7 billion, or 74%, came from Established Markets. Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Headquartered in Basel, Switzerland, our Group companies employed 133,413 full-time equivalent associates as of December 31, 2014. Our products are available in approximately 180 countries around the world.

Continuing Operations:

Pharmaceuticals Division

Pharmaceuticals researches, develops, manufactures, distributes and sells patented prescription medicines and is organized in the following franchises: Oncology, Cardio-metabolic, Immunology and Dermatology, Retina, Respiratory, Neuroscience and Established Medicines. In 2014, our Pharmaceuticals Division also created a unit focused on the development and commercialization of Cell and Gene Therapies.

The preceding list reflects a new composition of therapeutic areas implemented within our Pharmaceuticals Division in the fourth quarter of 2014. The tables and product descriptions set forth below in "—Pharmaceuticals," already reflect this new organizational structure. However, other sections of this Form 20-F still reflect the prior therapeutic areas. This includes the discussions and certain historical information provided in "Item 5. Operating and Financial Review and Prospects." and "Item 18. Financial Statements."

On April 22, 2014, we announced that we have agreed to acquire GSK oncology products and certain related assets for an aggregate cash consideration of $16 billion. Up to $1.5 billion of this cash consideration is contingent on certain development milestones. In addition, under the terms of the agreement we were granted a right of first negotiation over the co-development or commercialization of GSK's current and future oncology R&D pipeline, excluding oncology vaccines. The right of first negotiation is for a period of twelve and one half years from the acquisition closing date. We expect this transaction to close during the first half of 2015. This transaction is inter-conditional with the other announced transactions with GSK described under "—Vaccines Division" and "—Consumer Health."

In 2014, the Pharmaceuticals Division accounted for $31.8 billion, or 55%, of Group net sales, and for $8.5 billion, or 77%, of Group operating income (excluding Corporate income and expense, net).

Alcon Division

Our Alcon Division researches, develops, manufactures, distributes and sells eye care products and technologies to serve the full life cycle of eye care needs. Alcon offers a broad range of products to treat many eye diseases and conditions, and is organized into three franchises: Surgical, Ophthalmic Pharmaceuticals and Vision Care. The Surgical portfolio includes technologies and devices for cataract, retinal, glaucoma and refractive surgery, as well as intraocular lenses to treat cataracts and refractive errors, like presbyopia and astigmatism. Alcon also provides viscoelastics, surgical solutions, surgical packs, and other disposable products for cataract and vitreoretinal surgery. In Ophthalmic Pharmaceuticals, the portfolio includes treatment options for elevated intraocular pressure caused by glaucoma, anti-infectives to aid in the treatment of bacterial infections and bacterial conjunctivitis, and ophthalmic solutions to treat inflammation and pain associated with ocular surgery, as well as an intravitreal injection for vitreomacular traction including macular hole. The Ophthalmic Pharmaceuticals portfolio also includes eye and nasal allergy treatments, as well as over-the-counter dry eye relief and ocular vitamins. The Vision Care portfolio comprises daily disposable, monthly replacement, and color-

enhancing contact lenses, as well as a complete line of contact lens care products including multi-purpose and hydrogen-peroxide based solutions, rewetting drops and daily protein removers.

In 2014, Alcon accounted for $10.8 billion, or 19%, of Group net sales, and for $1.6 billion, or 14%, of Group operating income (excluding Corporate income and expense, net).

Sandoz Division

Our Sandoz Division focuses primarily on developing, manufacturing, distributing and selling prescription medicines that are not protected by valid and enforceable third-party patents, and pharmaceutical and biotechnological active substances. Sandoz is organized globally in three franchises: Retail Generics, Anti-Infectives, and Biopharmaceuticals & Oncology Injectables. In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals to third parties. Retail Generics includes the areas of Dermatology, Respiratory and Ophthalmics, as well as the specialty areas of cardiovascular, metabolism, central nervous system, pain, gastrointestinal, and hormonal therapies. In Anti-Infectives, Sandoz supplies generic antibiotics to a broad range of customers, as well as active pharmaceutical ingredients and intermediates to the pharmaceutical industry worldwide. In Biopharmaceuticals, Sandoz develops, manufactures and markets protein- or other biotechnology-based products (known as biosimilars or follow-on biologics) and provides biotechnology manufacturing services to other companies, and in Oncology Injectables, Sandoz develops, manufactures and markets cytotoxic products for the hospital market.

In 2014, Sandoz accounted for $9.6 billion, or 16%, of Group net sales, and for $1.1 billion, or 10%, of Group operating income (excluding Corporate income and expense, net).

Discontinuing Operations:

Vaccines Division

Our Vaccines Division researches, develops, manufactures, distributes and sells human vaccines worldwide. As previously announced, we have agreed to divest our Vaccines Division (excluding its influenza vaccines business) to GSK for up to $7.1 billion, consisting of $5.25 billion upfront and up to $1.8 billion in milestones, plus royalties. We expect that this transaction will close in the first half of 2015. This transaction is inter-conditional with the other announced transactions with GSK described under "—Pharmaceuticals Division" and "—Consumer Health." In October 2014, we announced that we had reached a definitive agreement with CSL to divest our Vaccines Division's influenza vaccines business for $275 million. We expect that this transaction will close in the second half of 2015. Prior to the January 9, 2014, completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A. for approximately $1.7 billion in cash, the division was known as Vaccines and Diagnostics. Diagnostics researched, developed, distributed and sold blood testing products.

In 2014, the Vaccines Division accounted for $1.5 billion, or 3%, of Group net sales, and an operating loss of $0.6 billion.

Consumer Health

Following the January 1, 2015 completion of the divestment of our Animal Health Division to Lilly for approximately $5.4 billion, Consumer Health now consists of our OTC (Over-the-Counter) Division. Prior to the divestment of Animal Health to Lilly, each of OTC and Animal Health had its own research, development, manufacturing, distribution and selling capabilities, but neither was material enough to the Group to be separately disclosed as a segment. OTC offers readily available consumer medicines. Prior to its divestment, Animal Health provided veterinary products for farm and companion animals. As previously announced, we have agreed with GSK to create a joint venture in consumer health by combining our OTC Division with the GSK consumer healthcare business, of which we would own 36.5% and would have four of eleven seats on the joint venture's Board. We will also have customary minority

rights and exit rights under a pre-defined, market-based pricing mechanism. We expect that this transaction will close in the first half of 2015. This transaction is inter-conditional with the other announced transactions with GSK described under "—Pharmaceuticals Division" and "—Vaccines Division."

In 2014, Consumer Health accounted for $4.3 billion, or 7%, of Group net sales, and for $0.5 billion, or 4%, of Group operating income (excluding Corporate income and expense, net).

PHARMACEUTICALS

Overview

Our Pharmaceuticals Division is a world leader in offering innovation-driven, patent-protected medicines to patients and physicians.

The Pharmaceuticals Division researches, develops, manufactures, distributes and sells patented pharmaceuticals in the following therapeutic areas:

- Oncology
- Cardio-Metabolic
- Immunology and Dermatology
- Retina
- Respiratory
- Neuroscience
- Established Medicines

The Pharmaceuticals Division is organized into global business franchises responsible for the commercialization of various products. The preceding list reflects the new composition of therapeutic areas within our Pharmaceuticals Division following recent changes as part of a larger transformation of organizational structures. The following tables and product descriptions reflect this new organizational structure. Other sections of this Form 20-F, however, still reflect the prior composition of therapeutic areas. This includes the discussions and certain historical information provided in "Item 5. Operating and Financial Review and Prospects" and "Item 18. Financial Statements." In 2014, our Pharmaceuticals Division also created a unit focused on the development and commercialization of Cell and Gene Therapies.

On April 22, 2014, Novartis announced that it had reached definitive agreements with GSK on a set of inter-conditional transactions that, if completed, would impact our Pharmaceuticals Division. As part of these transactions, we have agreed to acquire GSK oncology products and certain related assets for an aggregate cash consideration of $16 billion. Up to $1.5 billion of this cash consideration is contingent on certain development milestones. In addition, under the terms of the agreement we were granted a right of first negotiation over the co-development or commercialization of GSK's current and future oncology R&D pipeline, excluding oncology vaccines. The right of first negotiation is for a period of twelve and one half years from the acquisition closing date. We expect these transactions to close during the first half of 2015. The proposed transactions with GSK are subject to closing conditions and regulatory approvals.

The Pharmaceuticals Division is the largest contributor among the divisions of Novartis and reported consolidated net sales of $31.8 billion in 2014, which represented 55% of the Group's net sales.

The division is made up of approximately 80 affiliated companies which together employed 59,079 full-time equivalent associates as of December 31, 2014 (including NIBR), and sell products in approximately 155 countries. The product portfolio of the Pharmaceuticals Division includes more than 50

key marketed products, many of which are leaders in their respective therapeutic areas. In addition, the division's portfolio of development projects includes 134 potential new products and new indications or new formulations for existing products in various stages of clinical development.

Pharmaceuticals Division Products

The following table and summaries describe certain key marketed products in our Pharmaceuticals Division. While we intend to sell our marketed products throughout the world, not all products and indications are currently available in every country. Compounds and new indications in development are subject to required regulatory approvals and, in certain instances, contractual limitations. These compounds and indications are in various stages of development throughout the world. It may not be possible to obtain regulatory approval for any or all of the new compounds and new indications referred to in this Form 20-F in any country or in every country. In addition, for some of our products, we are required to conduct post-approval studies (Phase IIIb/IV) to evaluate long-term effects or to gather information on the use of the products under special conditions. See "—Regulation" for further information on the approval process. Some of the products listed below have lost patent protection or are otherwise subject to generic competition. Others are subject to patent challenges by potential generic competitors. The dates described under "Patents and Exclusivity" are based on the expiration of relevant patent protection for the product (usually the active ingredient) or on the expiration of regulatory data protection (RDP) for the product. Please see "—Intellectual Property" for general information on intellectual property and RDP, and for further information on the status of patents and exclusivity for Pharmaceuticals Division products.

Selected Marketed Products

Business franchise	Product	Common name	Indications (vary by country and/or formulation)	Formulation	Patents and Exclusivity
Oncology	*Afinitor* and *Afinitor Disperz*/ *Votubia*	everolimus	Advanced renal cell carcinoma after failure of treatment with VEGF-targeted therapy Advanced pancreatic neuroendocrine tumors SEGA associated with tuberous sclerosis Renal angiomyolipoma associated with tuberous sclerosis Advanced breast cancer in post-menopausal HR+/ HER2− women in combination with exemestane, after failure of anastrozole or letrozole	Tablet Dispersible tablets for oral suspension	US 2020* EU 2018-19 Japan 2018
	Exjade	deferasirox	Chronic iron overload due to blood transfusions and non-transfusion dependent thalassemia	Dispersible tablet for oral suspension	US 2019* EU 2021 Japan 2021

* See "—Intellectual Property" for further information on the patent and exclusivity status of these products.

Business franchise	Product	Common name	Indications (vary by country and/or formulation)	Formulation	Patents and Exclusivity
	Femara	letrozole	Hormone receptor-positive early breast cancer in postmenopausal women following surgery (upfront adjuvant therapy) Early breast cancer in post-menopausal women following standard tamoxifen therapy (extended adjuvant therapy) Advanced breast cancer in post-menopausal women (both as first- and second-line therapies)	Tablet	US Expired* EU Expired Japan RDP 2015
	Gleevec/*Glivec*	imatinib mesylate / imatinib	Certain forms of Ph+ chronic myeloid leukemia Certain forms of KIT+ gastrointestinal stromal tumors Certain forms of acute lymphoblastic leukemia Dermatofibrosarcoma protuberans Hypereosinophilic syndrome Aggressive systemic mastocytosis Myelodysplastic/ myeloproliferative diseases	Tablet Capsules	US July 2015* (including pediatric extension) EU (major countries) 2016 Japan expired for the main indications
	Jakavi	ruxolitnib	Disease-related splenomegaly or symptoms in adult patients with primary myelofibrosis (also known as chronic idiopathic myelofibrosis), post-polycythemia vera myelofibrosis or post-essential thrombocythemia myelofibrosis	Tablet	EU 2027* Japan 2027
	Sandostatin LAR and *Sandostatin* SC	octreotide acetate	Acromegaly Symptom control for certain forms of neuroendocrine tumors Delay of tumor progression in patients with midgut tumors	Vial Ampoule/pre-filled syringe	US 2017* EU expired Japan expired
	Signifor and *Signifor* LAR	pasireotide	Cushing's disease Acromegaly	Solution for subcutaneous injection in Ampoule Powder and solvent for suspension for IM injection	US 2026 EU 2026 Japan 2026
	Tasigna	nilotinib	Certain forms of chronic myeloid leukemia in patients resistant or intolerant to prior treatment including *Gleevec*/*Glivec* First line chronic myeloid leukemia	Capsule	US 2023 EU 2023 Japan 2024

* See "—Intellectual Property" for further information on the patent and exclusivity status of these products.

Business franchise	Product	Common name	Indications (vary by country and/or formulation)	Formulation	Patents and Exclusivity
	Zometa	zoledronic acid	Skeletal-related events from bone metastases (cancer that has spread to the bones) Hypercalcemia of malignancy	Vial/4mg Ready-to-use	Active ingredient expired
	Zykadia	ceritinib	Anaplastic lymphoma kinase-positive (ALK+) metastatic non-small cell lung cancer (NSCLC)	Capsules	US 2030 EU 2027 Japan 2027
Cardio-Metabolic	*Galvus* and *Eucreas*	*Galvus*: vildagliptin *Eucreas*: vildagliptin and metformin	Type 2 diabetes	Tablet	US not launched EU 2022* Japan 2024 Metformin active ingredient expired
Immunology and Dermatology	*Cosentyx*	secukinumab	Moderate-to-severe plaque psoriasis in adult patients who are candidates for systemic therapy or phototherapy Moderate-to-severe plaque psoriasis in adults who are candidates for systemic therapy Psoriasis vulgaris and psoriatic arthritis in adults who are not adequately responding to systemic therapies (except for biologics)	Lyophilized pre-filled syringe; Auto-injector	US 2028* EU 2030 Japan 2029
	Ilaris	canakinumab	Cryopyrin-associated periodic syndromes Systemic juvenile idiopathic arthritis Gouty arthritis (EU)	Lyophilized powder for reconstitution for subcutaneous injection	US 2024 EU 2024 (2025 provided pediatric extension granted) Japan 2024 (for CAPS)
	Myfortic	mycophenolic acid (as mycophenolate sodium)	Prophylaxis of organ rejection in patients receiving allogeneic renal transplants	Gastro-resistant tablet	Active ingredient expired*
	Neoral and *Sandimmune*	cyclosporine, USP Modified	Prevention of rejection following certain organ transplantation Non-transplantation autoimmune conditions such as severe psoriasis and severe rheumatoid arthritis	Capsule Oral solution Intravenous (*Sandimmune*)	Active ingredient expired
	Simulect	basiliximab	Prevention of acute organ rejection in de novo renal transplantation	Vial for injection or infusion	US 2020 EU Expired Japan Expired
	Xolair	omalizumab	Chronic Spontaneous Urticaria (CSU)/ Chronic idiopathic Urticaria See also, "Respiratory"	Lyophilized powder in vial and liquid formulation in pre-filled syringes	US 2018* EU 2017 Japan 2017
	Zortress/*Certican*	everolimus	Prevention of organ rejection (heart, liver and kidney)	Tablet Dispersible tablet	US 2020* EU 2018-19 Japan 2018

* See "—Intellectual Property" for further information on the patent and exclusivity status of these products.

Business franchise	Product	Common name	Indications (vary by country and/or formulation)	Formulation	Patents and Exclusivity
Retina	*Lucentis*	ranibizumab	Wet age-related macular degeneration Visual impairment due to diabetic macular edema Visual impairment due to macular edema secondary to retinal vein occlusion Visual impairment due to choroidal neovascularization secondary to pathologic myopia	Intravitreal injection	EU January 2022* Japan 2020
Respiratory	*Arcapta Neohaler/ Onbrez Breezhaler*	indacaterol	Chronic obstructive pulmonary disease	Inhalation powder hard capsules	US 2025* EU 2024 Japan 2025
	Seebri Breezhaler	glycopyrronium bromide	Chronic obstructive pulmonary disease	Inhalation powder hard capsules	Active ingredient: Expired* Formulations and uses: US 2025 EU 2025 Japan 2025 RDP: US 2018 EU 2022 Japan 2020
	TOBI and *TOBI Podhaler*	tobramycin	*Pseudomonas aeruginosa* infection in cystic fibrosis	Nebulizer solution (*TOBI)*, Inhalation powder (*TOBI Podhaler*)	Active ingredient: Expired* Commercial product: US RDP for *TOBI Podhaler* 2016 EU orphan exclusivity for *TOBI Podhaler* until 2023
	Ultibro Breezhaler	indacaterol / glycopyrronium bromide	Chronic obstructive pulmonary disease	Inhalation powder hard capsules	US 2025* EU 2024
	Xolair	omalizumab	Severe allergic asthma See also, "Immunology and Dermatology"	Lyophilized powder in vial and liquid formulation in pre-filled syringes	US 2018 EU 2017 Japan 2017
Neuroscience	*Comtan*	entacapone	Parkinson's disease patients who experience end-of-dose motor (or movement) fluctuations	Tablet	Active ingredient: Expired Japan RDP 2017
	Exelon	*Rivastigmine*	Mild-to-moderate Alzheimer's disease dementia Severe Alzheimer's disease dementia Dementia associated with Parkinson's disease	Capsule Oral solution Transdermal patch	Active Ingredient: Expired* US: Data Protection until Aug 2015 for 15cm^2 patch Formulation: US 2019 EU 2019 Japan 2023 (patent plus patent term extension) Japan: RDP May 2019

* See "—Intellectual Property" for further information on the patent and exclusivity status of these products.

Business franchise	Product	Common name	Indications (vary by country and/or formulation)	Formulation	Patents and Exclusivity
	Extavia	interferon beta-1b	Relapsing remitting and/or relapsing forms of multiple sclerosis in adult patients	Subcutaneous injection	Active ingredient expired
	Gilenya	fingolimod	Relapsing forms of multiple sclerosis	Capsule	Active ingredient (including 5 year patent term extensions): US 2019* EU 2018 Japan 2018 RDP: EU 2021 Japan 2021
	Stalevo	carbidopa, levodopa and entacapone	Parkinson's disease patients who experience end-of-dose motor (or movement) fluctuations	Tablet	Active ingredients: Expired* Combination patent: US 2020 EU 2020 Japan 2020
Established Medicines	*Amturnide*	aliskiren, amlodipine besylate and hydrochlorothiazide	Hypertension	Tablet	US 2018 (not including pediatric extension) EU 2020 (not including pediatric extension) Japan 2020
	Cibacen	benazepril hydrochloride	Hypertension Adjunct therapy in congestive heart failure Progressive chronic renal insufficiency	Tablet	No protection
	Clozaril/Leponex	clozapine	Treatment-resistant schizophrenia Prevention and treatment of recurrent suicidal behavior in patients with schizophrenia and psychotic disorders	Tablet	No protection
	Coartem/Riamet	artemether and lumefantrine	*Plasmodium falciparum* malaria or mixed infections that include *Plasmodium falciparum* Standby emergency malaria treatment	Tablet Dispersible tablet for oral suspension	Active ingredients: Expired US combination patent 2015
	Cubicin	daptomycin	Complicated skin and skin structure infections caused by Gram-positive susceptible isolates *Staphylococcus aureus* bloodstream infections (bacteremia), including those with right-sided infective endocarditis, caused by susceptible isolates	Powder for solution for injection or infusion	EU RDP 2016*

* See "—Intellectual Property" for further information on the patent and exclusivity status of these products.

Business franchise	Product	Common name	Indications (vary by country and/or formulation)	Formulation	Patents and Exclusivity
	Diovan	valsartan	Hypertension Heart failure Post-myocardial infarction	Tablets Capsules Oral solution	Active ingredient expired*
	Diovan HCT and *Co-Diovan*	valsartan and hydrochlorothiazide	Hypertension	Tablet	US expired* EU expired Japan 2016 (*Co-Diovan*)
	Exforge and *Exforge HCT*	valsartan and amlodipine besylate	Hypertension	Tablet	US expired* EU expired Japan 2015 (*Exforge* only) EU RDP 2017
	Focalin and *Focalin XR*	dexmethylphenidate HCl and dexmethylphenidate extended release	Attention deficit hyperactivity disorder	Tablet Capsule	Active ingredient: Expired Formulation: US 2018*
	Foradil	formoterol	Asthma Chronic obstructive pulmonary disease	*Aerolizer* (capsules) Aerosol	No protection
	Lamisil	terbinafine (terbinafine hydrochloride)	Fungal infection of the skin and nails caused by dermatophyte fungi *Tinea capitis* Fungal infections of the skin for the treatment of tinea corporis, tinea cruris, tinea pedis and yeast infections of the skin caused by the genus *Candida* Onychomycosis of the toenail or fingernail due to dermatophytes	Tablet Cream DermGel Solution Spray	Active ingredients expired
	Lescol and *Lescol XL*	fluvastatin sodium	Hypercholesterolemia and mixed dyslipidemia in adults Secondary prevention of major adverse cardiac events Slowing the progression of atherosclerosis Heterozygous familial hypercholesterolemia in children and adolescents	Capsule (*Lescol)* Tablet (*Lescol XL*)	Active ingredient expired
	Reclast/Aclasta	zoledronic acid 5 mg	Treatment of osteoporosis in postmenopausal women Treatment of osteoporosis in men Treatment and prevention of glucocorticoid-induced osteoporosis Prevention of postmenopausal osteoporosis Treatment of Paget's disease of the bone	Intravenous—solution for infusion	Active ingredient: Expired Dosage regime: EU 2021
	Ritalin	methylphenidate HCl	Attention deficit hyperactivity disorder and narcolepsy	Tablet	Active ingredient expired*

* See "—Intellectual Property" for further information on the patent and exclusivity status of these products.

Business franchise	Product	Common name	Indications (vary by country and/or formulation)	Formulation	Patents and Exclusivity
	Ritalin LA	methylphenidate HCl modified release	Attention deficit hyperactivity disorder	Capsule	Active ingredient expired*
	Tegretol	carbamazepine	Epilepsy Pain associated with trigeminal neuralgia Acute mania and bipolar affective disorders Alcohol withdrawal syndrome Painful diabetic neuropathy Diabetes insipidus centralis Polyuria and polydipsia of neurohormonal origin	Tablet Chewable tablet Oral suspension Suppository	Active ingredient expired
	Tekamlo and *Rasilamlo*	aliskiren and amlodipine besylate	Hypertension	Tablet	US 2018 (not including pediatric extension) EU 2020 (not including pediatric extension) Japan 2020
	Tekturna/*Rasilez*	aliskiren	Hypertension	Tablet	US 2018 (not including pediatric extension) EU 2020 (not including pediatric extension) Japan 2020
	Tekturna HCT/ *Rasilez HCT*	aliskiren and hydrochlorothiazide	Hypertension	Tablet	US 2018 (not including pediatric extension) EU 2020 (not including pediatric extension) Japan 2020
	Trileptal	oxcarbazepine	Epilepsy	Tablet Oral suspension	Active ingredient expired Oral formulation US 2020
	Tyzeka/*Sebivo*	telbivudine	Chronic hepatitis B	Tablet Oral solution	US expired EU RDP 2017
	Vivelle-Dot/ *Estradot*	estradiol hemihydrate	Estrogen replacement therapy for the treatment of the symptoms of natural or surgically induced menopause Prevention of postmenopausal osteoporosis	Transdermal patch	Active ingredient expired

* See "—Intellectual Property" for further information on the patent and exclusivity status of these products.

Business franchise	Product	Common name	Indications (vary by country and/or formulation)	Formulation	Patents and Exclusivity
	Voltaren/*Cataflam*	diclofenac sodium/ potassium/resinate/ free acid	Inflammatory and degenerative forms of rheumatism Post traumatic and post-operative pain, inflammation and swelling Painful and/or inflammatory conditions in gynecology Other painful and/or inflammatory conditions such as renal and biliary colic, migraine attacks and as adjuvant in severe ear, nose and throat infections	Tablet Capsule Oral drops / oral suspension Ampoule for injection Suppository Gel Powder for oral solution Transdermal patch	Active ingredient expired

* See "—Intellectual Property" for further information on the patent and exclusivity status of these products.

Key Marketed Products

Oncology

- *Gleevec*/*Glivec* (imatinib mesylate/imatinib) is a kinase inhibitor approved to treat patients with metastatic and/or unresectable KIT (CD117) positive (KIT+) gastrointestinal stromal tumors (GIST), as an adjuvant treatment for certain adult patients following resection of KIT+ GIST, and as a targeted therapy for Philadelphia chromosome-positive (Ph+) chronic myeloid leukemia (CML). First launched in 2001, *Gleevec*/*Glivec* is available in more than 120 countries. *Gleevec*/*Glivec* is also approved in the US, EU and Japan to treat Ph+ acute lymphoblastic leukemia, a rapidly progressive form of leukemia. *Gleevec*/*Glivec* is also approved in the US and EU to treat dermatofibrosarcoma protuberans, a rare solid tumor; hypereosinophilic syndrome; myelodysplastic/myeloproliferative diseases and other rare blood disorders. In the US, *Gleevec* is also approved for aggressive systemic mastocytosis. *Gleevec*/*Glivec* has received approvals in 68 countries as a post-surgery (adjuvant setting) therapy for certain adult patients with KIT+ GIST. Following approval by the FDA in January 2013, the EMA approved *Gleevec*/*Glivec* in July 2013 for pediatric patients with newly diagnosed Ph+ acute lymphoblastic leukemia in combination with chemotherapy.
- *Sandostatin* SC and *Sandostatin LAR* (octreotide acetate/octreotide acetate for injectable suspension) is a somatostatin analogue indicated for the treatment of patients with acromegaly, a chronic disease caused by over-secretion of pituitary growth hormone in adults. *Sandostatin* is also indicated for the treatment of patients with certain symptoms associated with carcinoid tumors and other types of gastrointestinal and pancreatic neuroendocrine tumors. Additionally, *Sandostatin LAR* is approved in 50 countries for treatment of patients with advanced neuroendocrine tumors of the midgut or unknown primary tumor location. A total of 58 countries have also approved a new presentation of *Sandostatin LAR*, which includes a new diluent, safety needle and vial adapter, with additional filings underway. *Sandostatin* was first launched in 1988 and is approved in more than 100 countries.
- *Afinitor* and *Afinitor Disperz*/*Votubia* (everolimus) is an oral inhibitor of the mTOR pathway. *Afinitor* is approved in more than 100 countries including the US, EU member states and Japan for advanced renal cell carcinoma following vascular endothelial growth factor-targeted therapy. *Afinitor* is also approved in more than 85 countries, including the US, EU and Japan for the treatment of advanced pancreatic neuroendocrine tumors. In addition, *Afinitor* is approved in more than 90 countries for advanced hormone receptor-positive, HER2-negative breast cancer

(advanced HR+/HER2− breast cancer). Everolimus is also approved in more than 80 countries including in the US as *Afinitor* and in the EU as *Votubia* to treat patients with subependymal giant cell astrocytoma (SEGA) associated with tuberous sclerosis complex (TSC) and in more than 70 countries for the treatment of adult patients with renal angiomyolipomas and TSC who do not require immediate surgery. The dispersible tablet for oral suspension formulation of the product is now approved in the TSC-SEGA population in the US and EU. Everolimus, the active ingredient in *Afinitor*, is also available under the trade names *Zortress*/*Certican* for use in transplantation in the US and EU, respectively, and is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

- *Tasigna* (nilotinib) is a signal transduction inhibitor of the BCR-ABL tyrosine kinase. Since its launch in 2007, *Tasigna* has been approved in more than 110 countries to treat patients with Ph+ CML in the chronic and/or accelerated phase who are resistant or intolerant to existing treatment, including *Gleevec*/*Glivec*. It is also approved in more than 85 markets, including the US, EU member states, Switzerland and Japan, to treat newly diagnosed patients in the chronic phase. Results from the global, randomized Phase III trial called ENESTnd (Evaluating Nilotinib Efficacy and Safety in Clinical Trials of Newly Diagnosed Ph+ CML Patients), a head-to-head comparison against *Gleevec*/*Glivec,* showed that *Tasigna* produced faster and deeper responses than *Gleevec*/*Glivec* in adult patients with newly diagnosed Ph+ CML. The ENESTnd five-year follow-up continued to demonstrate higher rates of early and deeper sustained molecular response, including a reduced risk of progression in patients treated with *Tasigna* compared to *Gleevec*/*Glivec*. Data also indicated a trend for higher overall survival and event-free survival in patients treated with *Tasigna* compared to *Gleevec*/*Glivec*. In addition, ENESTcmr is the first randomized trial in patients with Ph+ CML to investigate the impact of switching adult patients with residual molecular disease to *Tasigna* after a minimum of two years on treatment with *Gleevec*/*Glivec.* Three-year results from the ENESTcmr trial showed that switching to *Tasigna* led to deeper molecular responses in these patients, further reducing their disease burden.
- *Exjade* (deferasirox) is an oral iron chelator approved for the treatment of chronic iron overload due to blood transfusions in patients two years of age and older. Patients with congenital and acquired chronic anemia, such as thalassemia, sickle cell disease and myelodysplastic syndromes, require transfusions, which puts them at risk of iron overload. *Exjade* was first approved in 2005 and is now approved in more than 100 countries, including the US, EU member states and Japan. *Exjade* is also approved in more than 70 countries, including the US and EU member states, for the treatment of chronic iron overload in patients 10 years of age and older with non-transfusion-dependent thalassemia. Regulatory applications have been submitted in the US, Canada and other countries for a new film-coated tablet formulation.
- *Femara* (letrozole) is a once-daily oral aromatase inhibitor for the treatment of early stage or advanced breast cancer in postmenopausal women. *Femara* was first launched in 1996 and is currently available in more than 90 countries. *Femara* is approved in the US, EU member states and other countries in the adjuvant, extended adjuvant and neo-adjuvant (pre-operative) settings for early stage breast cancer. *Femara* is also approved in the US and other countries as adjuvant therapy for locally advanced breast cancer and for advanced breast cancer following anti-estrogen therapy. *Femara* is approved as neo-adjuvant therapy for early stage breast cancer in a limited number of countries. In Japan, *Femara* is approved for the treatment of all hormone receptor-positive breast cancer in postmenopausal women.
- *Jakavi* (ruxolitinib) is an oral inhibitor of the JAK1 and JAK2 tyrosine kinases. It is the first JAK inhibitor indicated for the treatment of disease-related splenomegaly or symptoms in adult patients with primary myelofibrosis, post-polycythemia vera myelofibrosis or post-essential thrombocythemia myelofibrosis. *Jakavi* is currently approved in more than 65 countries, including EU member states, Japan, Canada, Australia, Mexico and Argentina. In three-year follow-up data

from the COMFORT-I and COMFORT-II Phase III studies in myelofibrosis, *Jakavi* treatment reduced the risk of death and resulted in sustained reductions in spleen size—increased spleen size being a hallmark of myelofibrosis—while also improving quality of life. In three-year follow-up of the COMFORT-II study, patients treated with *Jakavi* demonstrated an overall survival advantage compared to patients receiving conventional therapy with a 52% reduction in risk of death observed in the *Jakavi* arm compared with conventional therapy. Regulatory applications have been submitted in the EU, Switzerland and Japan for *Jakavi* in polycythemia vera, and in January 2015 the CHMP adopted a positive opinion for *Jakavi* for the treatment of adult patients with polycythemia vera who are resistant to or intolerant of hydroxyurea. Novartis licensed ruxolitinib from Incyte Corporation for development and commercialization outside the US. Ruxolitinib, marketed in the US as Jakafi® by Incyte Corporation, was approved by the FDA in December 2014 for the treatment of patients with polycythemia vera who have had an inadequate response to or are intolerant of hydroxyurea. Jakafi® is also approved by the FDA for treatment of patients with intermediate or high-risk myelofibrosis, including primary myelofibrosis, post-polycythemia vera myelofibrosis and post-essential thrombocythemia myelofibrosis.

- *Zometa* (zoledronic acid for injection/zoledronic acid 4 mg) is a leading treatment to reduce or delay skeletal-related events, including pathologic fracture, spinal cord compression, and/or requirement of radiation therapy or surgery to bone, in patients with bone metastases (cancer that has spread to the bones) from solid tumors and multiple myeloma. First approved in the US in 2001 for the treatment of hypercalcemia of malignancy (tumor-induced excessive levels of calcium), *Zometa* is approved in more than 100 countries for this indication as well as for the treatment of patients with multiple myeloma and patients with bone metastasis from solid malignancies, including prostate, breast and lung cancer. Zoledronic acid, the active ingredient in *Zometa*, is also available under the trade names *Reclast*/*Aclasta* for use in non-oncology indications. *Reclast*/*Aclasta*, first approved in the EU in 2005, is now approved in 107 countries for the treatment of osteoporosis in postmenopausal women, osteoporosis in men, Paget's disease of bone and prevention of clinical fractures after hip fracture and for the treatment and prevention of glucocorticoid-induced osteoporosis.

- *Zykadia* (ceritinib) is an oral, selective inhibitor of ALK, an important therapeutic target in lung cancer. In April 2014, *Zykadia* was granted accelerated approval by the FDA for the treatment of patients with anaplastic lymphoma kinase-positive (ALK+) metastatic non-small cell lung cancer (NSCLC) who have progressed on or are intolerant to crizotinib. *Zykadia* is one of the first medicines to be approved following FDA Breakthrough Therapy designation, which was received in March 2013 due to the significant results observed in the clinical trials and the serious and life-threatening nature of ALK+ NSCLC in patients progressing on or intolerant to crizotinib who have no other treatment option. Additional regulatory submissions for *Zykadia* in ALK+ NSCLC are underway worldwide, with an application currently filed in the EU and several countries within North America, South America, Central America and Asia.

- *Signifor* (pasireotide) is a somatostatin analogue approved in more than 65 countries, including countries of the EU, Switzerland and the US, for the treatment of adults with Cushing's disease for whom pituitary surgery is not an option or has not been curative. In addition, in November 2014, the EMA approved *Signifor* in a new long-acting release formulation for once-monthly intramuscular injection to treat adult patients with acromegaly for whom surgery is not an option or has not been curative and who are inadequately controlled on treatment with a first-generation somatostatin analogue, following a positive opinion from the CHMP in September 2014. In December 2014, the FDA approved *Signifor* LAR (long-acting release) for injectable suspension, for intramuscular use, for the treatment of patients with acromegaly who have had inadequate response to surgery and/or for whom surgery is not an option.

Cardio-Metabolic

- *Galvus* (vildagliptin), an oral DPP-4 inhibitor, and *Eucreas*, a single-pill combination of vildagliptin and metformin, are indicated for the treatment of type 2 diabetes. The products were first approved in 2007. *Galvus* is currently approved in more than 120 countries, including EU member states, Japan and countries in Latin America and Asia-Pacific. *Eucreas* was the first single pill combining a DPP-4 inhibitor and metformin that was approved in Europe and under the trade name *Galvus Met* is currently approved in more than 100 countries. In 2012, *Galvus* received EU approval for expanded use as a second-line monotherapy for type 2 diabetes patients who cannot take metformin. In addition, in 2012, the European Commission approved the use of *Galvus* and *Eucreas* in combination with other diabetes treatments. The first new approval was for the use of vildagliptin in combination with insulin, with or without metformin, for patients with type 2 diabetes when diet, exercise and a stable dose of insulin do not result in glycemic control. The second approval was for the use of vildagliptin in triple combination with metformin and a sulphonylurea for the treatment of type 2 diabetes when diet and exercise plus dual therapy with these two agents do not provide adequate glycemic control. In 2013, a German agency, the Gemeinsamer Bundesausschuss (G-BA), initiated an analysis of the benefits of drugs approved prior to 2011. As part of that analysis the G-BA concluded that *Galvus* and *Eucreas* did not provide an added benefit over certain other medicines indicated for the treatment of that disease. As a result, we were unable to reach agreement with the head organization of the German statutory health insurance funds, GKV-Spitzenverband, on an acceptable price for *Galvus* and *Eucreas*, and in 2014 we stopped distribution of these products in Germany.

Immunology and Dermatology

- *Neoral* (cyclosporine, USP Modified) is an immunosuppressant to prevent organ rejection following a kidney, liver, or heart transplant. *Neoral* is also approved for use in lung transplant in many countries outside of the US. This micro-emulsion formulation of cyclosporine is also indicated for treating selected autoimmune disorders such as psoriasis and rheumatoid arthritis. First launched in 1995, *Neoral* is marketed in more than 90 countries.

- *Myfortic* (enteric-coated formulation of mycophenolate sodium) is approved in more than 90 countries for the prevention of acute rejection of kidney allografts, and is indicated in combination with cyclosporine and corticosteroids. *Myfortic* was first approved in the US in 2004 and in the EU in 2003.

- *Zortress*/*Certican* (everolimus) is an oral inhibitor of the mTOR pathway, indicated to prevent organ rejection following solid organ transplantation. *Zortress*/*Certican* has been extensively studied as an immunosuppressant agent in solid organ transplantation with more than 10,000 transplant recipients enrolled in Novartis-sponsored clinical trials worldwide. Under the trade name *Certican*, it is approved in more than 90 countries to prevent organ rejection for renal and heart transplant patients, and in addition, in more than 70 countries worldwide to prevent organ rejection for liver transplant patients. In the US, under the trade name *Zortress*, the drug is approved for the prophylaxis of organ rejection in adult patients at low-moderate immunologic risk receiving a kidney transplant as well as for the prophylaxis of allograft rejection in adult liver transplant recipients. Everolimus is also available from Novartis in different dosage strengths and for different uses in non-transplant patient populations under the brand names *Afinitor, Afinitor Disperz* and *Votubia*. Everolimus is also exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

- *Ilaris* (canakinumab) is a human monoclonal antibody that selectively binds and neutralizes interleukin-1β (IL-1β), a pro-inflammatory cytokine. Since 2009, *Ilaris* has been approved in over 60 countries for the treatment of children and adults suffering from cryopyrin-associated periodic syndromes, a group of rare disorders characterized by chronic recurrent fever, urticaria, occasional

arthritis, deafness, and potentially life-threatening amyloidosis. In 2013, *Ilaris* was approved in the EU for the treatment of acute gouty arthritis in patients who cannot be managed with standard of care, and in the US, EU and other countries for the treatment of systemic juvenile idiopathic arthritis. *Ilaris* is also being developed for hereditary periodic fever syndromes.

- *Xolair* (omalizumab) is currently approved in the EU, Switzerland and 35 other countries as a treatment for chronic spontaneous urticaria (CSU)/chronic idiopathic urticaria (CIU) including approvals in Europe as add-on therapy for the treatment of CSU in adult and adolescent (12 years and above) patients with inadequate response to H1 antihistamine treatment, and, in the US, for the treatment of adults and adolescents (12 years of age and above) with CIU who remain symptomatic despite H1 antihistamine treatment. See also, *Xolair* in "Respiratory" below. Novartis licensed *Xolair* from Genentech/Roche. We co-promote *Xolair* with Genentech/Roche in the US and share a portion of operating income, but we do not record any US sales. Novartis records all sales of *Xolair* outside the US. See "Item 18. Financial Statements—Note 27" for further information.
- *Cosentyx* (secukinumab) is a fully human IgG1 monoclonal antibody that selectively binds to and neutralizes interleukin 17A (IL-17A), a key pro-inflammatory cytokine. In December 2014, *Cosentyx* was approved in Japan for the treatment of both psoriasis vulgaris and psoriatic arthritis in adults who are not adequately responding to systemic therapies (except for biologics). This approval marked the first country approval for *Cosentyx* in the world and made it the first IL-17A inhibitor to receive regulatory approval in either of these indications in Japan. In January 2015, *Cosentyx* was approved in the EU as a first-line systemic treatment of moderate-to-severe plaque psoriasis in adults who are candidates for systemic therapy, and in the US for the treatment of moderate-to-severe plaque psoriasis in adult patients who are candidates for systemic therapy or phototherapy. *Cosentyx* is also being developed for psoriatic arthritis and ankylosing spondylitis.

Retina

- *Lucentis* (ranibizumab) is a recombinant humanized high affinity antibody fragment that binds to vascular endothelial growth factors (VEGF). It is the only anti-VEGF therapy licensed in many countries for four ocular indications: wet age-related macular degeneration (wet AMD), visual impairment due to diabetic macular edema (DME), visual impairment due to macular edema secondary to branch and central retinal vein occlusion (BRVO and CRVO), and visual impairment due to choroidal neovascularization secondary to pathologic myopia (myopic CNV). *Lucentis* is approved in more than 100 countries to treat patients with wet AMD, for the treatment of visual impairment due to DME and macular edema secondary to RVO. Also, *Lucentis* is licensed in more than 70 countries for the treatment of visual impairment due to myopic CNV. Since its launch in 2007, there are more than 2.8 million patient-treatment years of exposure for *Lucentis.* We licensed *Lucentis* from Genentech for development and commercialization outside of the US. See "Item 18. Financial Statements—Note 27" for further information.

Respiratory

- *Xolair* (omalizumab) is the only humanized monoclonal antibody approved for the treatment of moderate to severe persistent allergic asthma in the US in adolescents (aged 12 and above) and adults. *Xolair* is approved in more than 90 countries, including the US since 2003 and the EU since 2005. It is approved for severe persistent allergic asthma in the EU in children (aged six and above), adolescents, and adults. A liquid formulation of *Xolair* in pre-filled syringes has been launched in most European countries. In Japan, *Xolair* was approved in January 2009 for the treatment of severe persistent allergic asthma in adults (aged 15 and older) and was approved in August 2013 in pediatric patients aged 6 years or older for the same indication. See also, *Xolair* in "Immunology and Dermatology" above.

- *TOBI Podhaler* (tobramycin inhalation powder) is an inhaled dry powder formulation of the antibiotic tobramycin, delivered using a simple and portable patient-friendly device that reduces administration time by 72% relative to *TOBI* (tobramycin nebulizer solution), with comparable efficacy and safety. *TOBI Podhaler* was approved by the FDA in March 2013 and has been approved in the EU since July 2011. It is approved in over 60 countries. It is indicated for the management of cystic fibrosis patients aged six years and older with *Pseudomonas aeruginosa* infection in their lungs, whose lung function is within a certain range.
- *Arcapta Neohaler*/*Onbrez Breezhaler* (indacaterol) is a once-daily long-acting beta$_2$-adrenergic agonist (LABA) administered in a single-dose dry powder inhaler indicated for maintenance bronchodilator treatment of airflow obstruction in adult patients with chronic obstructive pulmonary disease (COPD). Once-daily *Onbrez Breezhaler* was first approved in the EU in November 2009 at two dose strengths, 150 mcg and 300 mcg. It is now approved in over 100 countries worldwide. In July 2011, the FDA approved a 75 mcg once-daily dose of indacaterol under its US trade name, *Arcapta Neohaler*, and Japanese regulatory authorities approved *Onbrez* Inhalation Capsules in a 150 mcg once-daily dose. It was the first inhaled COPD product available to patients to be delivered via the low resistance *Breezhaler* inhalation device.
- *Seebri Breezhaler* (glycopyrronium bromide), a once-daily inhaled long-acting muscarinic antagonist (LAMA), received its first regulatory approvals in September 2012. *Seebri Breezhaler* 44 mcg inhalation powder, hard capsules received approval in the EU as a maintenance bronchodilator treatment to relieve symptoms for adult patients with COPD, and in Japan the MHLW approved *Seebri* (glycopyrronium) Inhalation Capsules 50 mcg administered through the *Breezhaler* device as an inhaled maintenance bronchodilator treatment for the relief of various symptoms due to airway obstructive disease in COPD (chronic bronchitis, emphysema). It is now approved in more than 80 countries worldwide outside the US. *Seebri Breezhaler* is the second inhaled COPD product available to patients to be delivered via the *Breezhaler* inhalation device. Glycopyrronium bromide was exclusively licensed to Novartis in April 2005 by Vectura and its co-development partner Sosei.
- *Ultibro Breezhaler* (indacaterol/glycopyrronium bromide) is a once-daily inhaled fixed-dose combination of the LABA indacaterol and the LAMA glycopyrronium bromide. *Ultibro Breezhaler* (indacaterol 85 mcg/glycopyrronium 43 mcg), inhalation powder, hard capsules was approved in the EU in September 2013 as a maintenance bronchodilator treatment to relieve symptoms in adult patients with COPD, and in Japan the MHLW approved *Ultibro* Inhalation Capsules (glycopyrronium 50 mcg/indacaterol 110 mcg), delivered through the *Breezhaler* inhalation device, for relief of various symptoms due to airway obstruction in COPD (chronic bronchitis, emphysema). *Ultibro Breezhaler* is the third inhaled COPD product available to patients to be delivered via the *Breezhaler* inhalation device. It is approved in over 50 countries outside the US and launched in over 25 countries (including the UK, Germany, Japan and Canada). Glycopyrronium bromide was exclusively licensed to Novartis in April 2005 by Vectura and its co-development partner Sosei.

Neuroscience

- *Gilenya* (fingolimod) is the first oral therapy approved to treat relapsing-remitting multiple sclerosis (RRMS) and the first in a new class of compounds called sphingosine 1-phosphate receptor modulators. In the US, *Gilenya* is indicated for relapsing forms of MS. In the EU, *Gilenya* is indicated for adult patients with high disease activity despite treatment with at least one disease modifying agent, or rapidly evolving severe relapsing-remitting MS. *Gilenya* is the only oral disease-modifying therapy (DMT) to impact the course of RRMS with high efficacy across four key measures of disease activity: relapses, MRI lesions, brain shrinkage (brain volume loss) and disability progression. As of November 2014, more than 114,000 patients have been treated in clinical trials and in a post-marketing setting and there are currently more than 195,000 patient

years of exposure. *Gilenya* is currently approved in over 80 countries around the world. *Gilenya* is licensed from Mitsubishi Tanabe Pharma Corporation.

- *Exelon* (rivastigmine tartrate) and *Exelon* Patch (rivastigmine transdermal system) are cholinesterase inhibitors indicated for the treatment of Alzheimer's disease (AD) dementia and Parkinson's disease (PD) dementia. They are the oral and transdermal formulations, respectively, of the cholinesterase inhibitor rivastigmine. *Exelon* capsules have been available since 1997 to treat mild to moderate AD dementia and are approved in more than 90 countries. In 2006, *Exelon* became the only cholinesterase inhibitor to be approved for mild to moderate PD dementia in addition to AD in both the US and EU. *Exelon* Patch was approved in 2007 in the US and EU and has been approved for the treatment of mild-to-moderate AD in more than 90 countries, including more than 20 countries where it is also approved for Parkinson's disease dementia. The once-daily *Exelon* Patch has shown comparable efficacy and superior tolerability to the highest recommended doses of *Exelon* capsules, with significant improvement in cognition and overall functioning compared to placebo. In June 2013, the FDA expanded the approved indication for *Exelon* Patch to also include the treatment of patients with severe Alzheimer's disease. In January 2013, European Marketing Authorization was obtained for the higher dose in mild-to-moderate AD.
- *Comtan* (entacapone) and *Stalevo* (carbidopa, levodopa and entacapone) are indicated for the treatment of patients with Parkinson's disease who experience end of dose motor (or movement) fluctuations, known as "wearing off". *Comtan* was approved in Europe in 1998 and in the US in 1999 while *Stalevo* was approved in the US and EU in 2003. Both products are marketed in more than 50 countries by Novartis under a licensing agreement with Orion Corporation. *Stalevo* was approved in China in August 2012 and was approved in Japan in July 2014.

Established Medicines

- *Diovan* (valsartan), together with *Diovan HCT*/*Co-Diovan* (valsartan and hydrochlorothiazide), is an angiotensin II receptor blocker (ARB) and is one of the top-selling branded anti-hypertensive medications worldwide (IMS MAT September 2014; 57 countries audited). *Diovan* is the only agent in its class approved to treat all of the following: high blood pressure (including children 6 to 18 years), high-risk heart attack survivors and patients with heart failure. First launched in 1996, *Diovan* is available in more than 120 countries for treating high blood pressure, in more than 90 countries for heart failure, and in more than 70 countries for heart attack survivors. First launched in 1997, *Diovan HCT*/*Co-Diovan* is approved in over 100 countries worldwide. In July 2008, the FDA approved *Diovan HCT* for the first-line treatment of hypertension in patients unlikely to achieve blood pressure control on a single agent. In 2009, *Co-Diovan* was approved for treatment of high blood pressure in Japan. In September 2010, all EU member states locally approved *Diovan* for use in children aged 6 to 18 years. In 2012, the Japanese MHLW approved *Diovan* for the treatment of pediatric hypertension in children age 6 years or older. This approval marks the first time an ARB has been approved for the treatment of pediatric hypertension in children age 6 years or older in Japan. *Diovan* is subject to generic competition in the US, EU and Japan. *Diovan HCT*/*Co-Diovan* is subject to generic competition in the US and EU.
- *Exforge* (valsartan and amlodipine besylate) is a single-pill combination of the ARB *Diovan* and the calcium channel blocker amlodipine besylate. First approved for the treatment of high blood pressure in Switzerland in 2006, and in the US and EU in 2007, it is now available in more than 100 countries. In 2008, the FDA approved *Exforge* for the first-line treatment of hypertension in patients likely to need multiple drugs to achieve their blood pressure goals. In January 2010, *Exforge* was approved in Japan and also launched in China. *Exforge HCT* (valsartan, amlodipine besylate and hydrochlorothiazide) is a single pill combining three widely prescribed high blood pressure treatments: an ARB, a calcium channel blocker and a diuretic (hydrochlorothiazide). *Exforge HCT* was approved in the EU and the US in 2009, and is now available in more than 60 countries.

- *Voltaren*/*Cataflam* (diclofenac sodium/potassium/resinate/free acid) is a leading non-steroidal anti-inflammatory drug (NSAID) for the relief of symptoms in rheumatic diseases such as rheumatoid arthritis and osteoarthritis, and for various other inflammatory and pain conditions. *Voltaren*/*Cataflam* was first registered in 1973 and is available in more than 140 countries. This product, which is subject to generic competition, is marketed by the Pharmaceuticals Division in a wide variety of dosage forms, including tablets, drops, suppositories, ampoules and topical therapy. In addition, in various countries, our Sandoz Division markets generic versions of the product, our Alcon Division markets *Voltaren* for ophthalmic indications, and our OTC Division markets low-dose oral forms and the topical therapy of *Voltaren* as over-the-counter products.
- *Ritalin, Ritalin LA, Focalin* and *Focalin XR* (methylphenidate HCl, methylphenidate HCl extended release, dexmethylphenidate HCl and dexmethylphenidate HCl extended release) are indicated for the treatment of attention deficit hyperactivity disorder (ADHD) in children. *Ritalin LA* and *Focalin XR* are additionally indicated for ADHD in adults. *Ritalin* is also indicated for narcolepsy. *Ritalin* was first marketed during the 1950s and is available in over 70 countries. *Ritalin LA* is available in over 30 countries. *Focalin* comprises the active d-isomer of methylphenidate and therefore requires half the dose of *Ritalin*. *Focalin* and *Focalin XR* are available in the US.
- *Tegretol* (carbamazepine) is indicated for epilepsy (partial seizures, generalized tonic clonic and mixed forms of seizures), acute mania and maintenance treatment of bipolar disorders, alcohol withdrawal syndrome, trigeminal neuralgia, glossopharyngeal neuralgia, painful diabetic neuropathy, diabetes insipidus centralis and polyuria and polydipsia of neurohormonal origin. It is available in 129 countries. Generics represent approximately 50% of the carbamazepine market.

Compounds in Development

The traditional model of development comprises three phases, which are defined as follows:

Phase I: First clinical trials of a new compound, generally performed in a small number of healthy human volunteers, to assess the clinical safety and tolerability as well as metabolic and pharmacologic properties of the compound.

Phase II: Clinical studies that are performed with patients who have the target disease, with the aim of continuing the Phase I safety assessment in a larger group, assessing the efficacy of the drug in the patient population, and determining the appropriate doses for further evaluation.

Phase III: Large-scale clinical studies with several hundred to several thousand patients, which are conducted to establish the safety and efficacy of the drug-specific indications for regulatory approval. Phase III trials may also be used to compare a new drug against a current standard of care to evaluate the overall benefit-risk relationship of the new medicine.

Though we use this traditional model as a platform, we have tailored the process to be simpler, more flexible and efficient. Our development paradigm consists of two parts: Exploratory Development and Confirmatory Development. Exploratory Development consists of clinical "proof of concept" (PoC) studies, which are small clinical trials (typically 5-15 patients) that combine elements of traditional Phase I/II testing. These customized trials are designed to give early insights into issues such as safety, efficacy and toxicity for a drug in a given indication. Once a positive proof of concept has been established, the drug moves to the Confirmatory Development stage. Confirmatory Development has elements of traditional Phase II/III testing and includes trials aimed at confirming the safety and efficacy of the drug in the given indication leading up to submission of a dossier to health authorities for approval. Like traditional Phase III testing, this stage can also include trials which compare the drug to the current standard of care for the disease, in order to evaluate the drug's overall risk/benefit profile.

The following table and paragraph summaries provide an overview of the key projects currently in the Confirmatory Development stage within our Pharmaceuticals Division, including projects seeking to develop potential uses of new molecular entities, as well as potential additional indications or new formulations for already marketed products. The year that each project entered the current phase of development disclosed below reflects the year in which the decision to enter the phase was made. This may be different from the year in which the first patient received the first treatment in the related clinical trial. A reference to a project being in registration means that an application has been filed with a health authority for marketing approval.

Selected Development Projects

Project/Product	Common name	Mechanism of action	Potential indication/ Disease area	Business franchise	Formulation/ Route of administration	Year Project Entered Current Development Phase	Planned filing dates/Current phase
ACZ885	canakinumab	Anti-interleukin-1β monoclonal antibody	Hereditary periodic fevers	Immunology and Dermatology	Subcutaneous injection	2013	2016/III
			Secondary prevention of cardiovascular events	Cardio-Metabolic		2011	2017/III
Afinitor/Votubia (RAD001)	everolimus	mTOR inhibitor	Non-functioning GI and lung neuroendocrine tumors	Oncology	Oral	2012	2015/III
			Tuberous sclerosis complex seizures			2013	2016/III
			Diffuse large B-cell lymphoma			2009	2018/III
BAF312	siponimod	Sphingosine-1-phosphate receptor modulator	Secondary progressive multiple sclerosis	Neuroscience	Oral	2012	≥2019/III
BCT197	TBD	Anti-inflammatory agent	Chronic obstructive pulmonary disease	Respiratory	Oral	2011	≥2019/II
BGJ398	TBD	Pan-FGF receptor kinase inhibitor	Solid tumors	Oncology	Oral	2012	≥2019/II
BGS649	TBD	Aromatase inhibitor	Obese hypogonadotropic hypogonadism	Cardio-Metabolic	Oral	2010	≥2019/II
BKM120	buparlisib	PI3K inhibitor	Metastatic breast cancer, hormone receptor-positive, aromatase inhibitor resistant, mTOR inhibitor naïve	Oncology	Oral	2011	2015/III
			Metastatic breast cancer, hormone receptor-positive, aromatase inhibitor and mTOR inhibitor resistant			2011	2016/III
			Solid tumors			2011	≥2019/I
BYL719	alpelisib	PI3K inhibitor	Solid tumors	Oncology	Oral	2010	≥2019/I
BYM338	bimagrumab	Inhibitor of activin receptor Type II	Sporadic inclusion body myositis	Neuroscience	Intravenous infusion	2013	2016/III
			Hip fracture	Neuroscience		2013	≥2019/II
			Sarcopenia	Neuroscience		2014	≥2019/II
CAD106	TBD	Beta-amyloid-protein therapy	Alzheimer's disease	Neuroscience	Intramuscular injection	2008	≥2019/II
CJM112	TBD	Anti-interleukin-17 monoclonal antibody	Immune disorders	Neuroscience	Subcutaneous injection	2013	≥2019/I

Project/Product	Common name	Mechanism of action	Potential indication/ Disease area	Business franchise	Formulation/ Route of administration	Year Project Entered Current Development Phase	Planned filing dates/Current phase
Cosentyx (AIN457)	secukinumab	Anti-interleukin-17 monoclonal antibody	Psoriatic arthritis	Immunology and Dermatology	Subcutaneous injection	2011	2015/III
			Ankylosing spondylitis			2011	2015/III
CTL019	tisagenlecleucel-T	CD19-targeted chimeric antigen receptor T-cell immunotherapy	Adult and pediatric acute lymphoblastic leukemia	Cell and Gene Therapies Unit	Intravenous	2012	2016/II
			Diffuse large B-cell lymphoma			2014	2017/II
EGF816	TBD	Epidermal growth factor receptor	Solid tumors	Oncology	Oral	2014	≥2019/I/II
Exjade film-coated tablet (FCT)	deferasirox	Iron chelator	Iron overload	Oncology	Oral film-coated tablet	2014	US (registration)
FCR001	TBD	Inducing stable donor chimerism and immunological tolerance	Renal transplant	Cell and Gene Therapies Unit	Infusion	2009	≥2019/II
Gilenya	fingolimod	Sphingosine-1-phosphate receptor modulator	Chronic inflammatory demyelinating polyradiculoneuropathy	Neuroscience	Oral	2012	2017/III
HSC835	TBD	Stem cell regeneration	Stem cell transplantation	Cell and Gene Therapies Unit	Infusion	2012	≥2019/II
INC280	capmatinib	cMET inhibitor	Non-small cell lung cancer	Oncology	Oral	2013	2018/II
Jakavi	ruxolitinib	Janus kinase inhibitor	Polycythemia vera	Oncology	Oral	2014	EU (registration)
KAE609	cipargamin	PfATP4 inhibitor	Malaria	Established Medicines	Oral	2012	2017/II
KAF156	TBD	TBD	Malaria	Established Medicines	Oral	2013	≥2019/II
LBH589	panobinostat	pan-deacetylase inhibitor (pan-DACi)	Relapsed or relapsed-and-refractory multiple myeloma	Oncology	Oral	2014	US/EU (registration)
LCI699	osilodrostat	Aldosterone synthase inhibitor	Cushing's disease	Oncology	Oral	2011	2017/III
LCQ908	pradigastat	Diacylglycerol acyl transferase-1 inhibitor	Familial chylomicronemia syndrome	Cardio-Metabolic	Oral	2012	2015/III
LCZ696	valsartan and sacubitril (as sodium salt complex)	Angiotensin receptor/ neprilysin inhibitor	Chronic heart failure with reduced ejection fraction	Cardio-Metabolic	Oral	2014	US/EU (registration)
			Chronic heart failure with preserved ejection fraction			2013	≥2019/III
LDE225	sonidegib	Smoothened receptor/ hedgehog signaling inhibitor	Advanced basal cell carcinoma	Immunology and Dermatology	Oral	2014	US/EU (registration)

Project/Product	Common name	Mechanism of action	Potential indication/ Disease area	Business franchise	Formulation/ Route of administration	Year Project Entered Current Development Phase	Planned filing dates/Current phase
LEE011	ribociclib	CDK4/6 Inhibitor	Hormone receptor-positive, HER2 negative advanced breast cancer (postmenopausal women)	Oncology	Oral	2013	2016/III
			Hormone receptor-positive, HER2 negative advanced breast cancer (premenopausal women)			2014	2018/III
			Solid tumors			2011	2018/I
LGX818[1]	encorafenib	RAF inhibitor	Solid tumors	Oncology	Oral	2012	≥2019/II
LIK066	TBD	SGLT 1 / 2 inhibitor	Type 2 diabetes	Cardio-Metabolic	Oral	2011	≥2019/II
LJM716	TBD	HER3 inhibitor	Solid tumors	Oncology	Intravenous	2012	≥2019/I
Lucentis	ranibizumab	Anti-VEGF monoclonal antibody fragment	Choroidal neovascularization and macular edema secondary to conditions other than age-related macular degeneration, diabetic macular edema, retinal vein occlusion and pathologic myopia	Retina	Intravitreal injection	2013	2016/III
			Retinopathy of Prematurity (ROP)			2014	2018/III
MEK162[2]	binimetinib	MEK inhibitor	NRAS mutant melanoma	Oncology	Oral	2013	2016/III
			Low-grade serous ovarian cancer			2013	2016/III
			Solid tumors			2011	≥2019/II
MEK162[2] and LGX818[1]	binimetinib and encorafenib	MEK inhibitor and RAF inhibitor	BRAF mutant melanoma	Oncology	Oral	2013	2016/III
OAP030 (*Fovista*)	TBD	Aptamer anti-platelet-derived growth factor (PDGF)	Wet age-related macular degeneration	Retina	Solution	2013	2016/III
PKC412	midostaurin	Signal transduction inhibitor	Acute myeloid leukemia	Oncology	Oral	2008	2015/III
			Aggressive systemic mastocytosis			2008	2015/II
QAW039	fevipiprant	CRTH2 antagonist	Asthma	Respiratory	Oral	2010	≥2019/II
			Atopic dermatitis	Immunology and Dermatology		2013	≥2019/II
QAX576	TBD	Anti-interleukin-13 monoclonal antibody	Allergic diseases	Immunology and Dermatology; Respiratory	Subcutaneous injection	2013	≥2019/II
QGE031	TBD	High affinity anti-IgE monoclonal antibody	Asthma	Respiratory	Subcutaneous injection	2012	≥ 2019/II
RLX030	serelaxin	Recombinant form of human relaxin-2 hormone	Acute heart failure	Cardio-Metabolic	Intravenous infusion	2009	2016/III
Seebri (NVA237)	glycopyrronium bromide	Long-acting muscarinic antagonist	Chronic obstructive pulmonary disease	Respiratory	Inhalation	EU: 2012 US: 2014	EU (approved) US (registration)[3]
Signifor LAR (SOM230)	pasireotide	Somatostatin analogue	Cushing's disease	Oncology	Long-acting release/ Intramuscular injection	2011	2016/III

Project/Product	Common name	Mechanism of action	Potential indication/ Disease area	Business franchise	Formulation/ Route of administration	Year Project Entered Current Development Phase	Planned filing dates/Current phase
Tasigna	nilotinib	BCR-ABL inhibitor	Chronic myeloid leukemia treatment-free remission	Oncology	Oral	2012	2016/II
Tekturna	aliskiren	Direct renin inhibitor	Reduction of cardiovascular death/ hospitalizations in chronic heart failure	Established Medicines	Oral	2009	2016/III
Ultibro (QVA149)	indacaterol and glycopyrronium bromide	Long-acting beta$_2$-adrenergic agonist and long-acting muscarinic antagonist	Chronic obstructive pulmonary disease	Respiratory	Inhalation	EU: 2013 US: 2014	EU (approved) US (registration)[3]
Zykadia (LDK378)	ceritinib	ALK inhibitor	ALK+ advanced non-small cell lung cancer (post chemotherapy and post crizotinib)	Oncology	Oral	US: 2014 EU: 2014	US (approved) EU (registration)
			ALK+ advanced non-small cell lung cancer (chemotherapy naïve, crizotinib naïve)			2013	2017/III

(1) Conditional on completion of the previously announced transactions with GSK and receipt of regulatory approvals, we have agreed to divest LGX818 to Array BioPharma Inc.

(2) Conditional on completion of the previously announced transactions with GSK and receipt of regulatory approvals, we have agreed to return our rights in MEK162 to Array BioPharma Inc.

(3) Submission pending acceptance by FDA.

Key Development Projects

- ACZ885 (canakinumab) was approved in the EU in March 2013 for the treatment of acute attacks in gouty arthritis as *Ilaris*. In 2013 *Ilaris* was also approved for the treatment of systemic juvenile idiopathic arthritis in the US, EU and other countries. Based on Phase II data of ACZ885 in TNF-receptor associated periodic syndrome and Familial Mediterranean Fever showing substantial symptom relief in these two rare periodic fever syndromes, a Phase III study was initiated in June 2014. The goal of this pivotal confirmatory study is to demonstrate efficacy and safety in TNF-receptor associated periodic syndrome, colchicine resistant Familial Mediterranean Fever and Hyper-IgD syndrome. This approach has been agreed with FDA and CHMP. ACZ885 is also being investigated in the pivotal Phase III CANTOS study to determine whether ACZ885 can reduce the risk of recurrent cardiovascular events (cardiovascular death, non-fatal myocardial infarction, non-fatal stroke) in post-myocardial infarction patients with elevated inflammatory burden versus placebo when administered quarterly in addition to standard of care.
- *Afinitor* and *Afinitor Disperz*/*Votubia* (RAD001, everolimus) is an oral inhibitor of the mTOR pathway. Phase III studies are underway in patients with advanced breast cancer, diffuse large B-cell lymphoma and non-functioning GI/Lung NET. The EXIST-3 (EXamining everolimus In a Study of TSC) clinical trial is underway to evaluate the efficacy and safety of everolimus in patients with TSC who have refractory partial-onset seizures (uncontrollable seizures localized to a specific area of the brain). Results from the Phase III BOLERO-1 (Breast cancer trials of OraL EveROlimus-1) trial of everolimus in combination with trastuzumab and paclitaxel as a first-line treatment in women with human epidermal growth factor receptor-2 positive (HER2+) advanced breast cancer did not meet the threshold of statistical significance for both primary objectives of the study, progression-free survival among patients with HER2+ advanced breast cancer or the sub-population of women with hormone-receptor negative, HER2+ advanced breast cancer.

- BAF312 (siponimod) is an oral, second-generation sphingosine 1-phosphate receptor modulator in Phase III development for secondary progressive multiple sclerosis. BAF312 binds selectively to the sphingosine 1-phosphate receptor subtypes 1 and 5, distributes effectively to the brain where it may modulate central S1P1,5 receptors to impact central nervous system inflammation and repair mechanisms. The results from the BOLD study, an adaptive dose-ranging Phase II study, were published in *Lancet Neurology* in 2013. These results showed that compared to placebo, BAF312 reduced brain MRI lesions by up to 80% in relapsing-remitting multiple sclerosis and relapses were infrequent and significantly reduced. BAF312 entered Phase III development in secondary progressive multiple sclerosis in 2012.
- BKM120 (buparlisib) is an orally bioavailable pan-PI3K inhibitor. The PI3K/AKT/mTOR pathway is an important intracellular signaling network that regulates cellular metabolism, proliferation and survival. Abnormal activation of the PI3K/AKT/mTOR pathway has been identified as an important step in the initiation and maintenance of tumors and a key regulator of angiogenesis and upregulated metabolic activities in tumor cells. BKM120 has shown significant cell growth inhibition and induction of apoptosis in a variety of tumor cell lines as well as in animal models. BKM120 is currently being investigated in clinical trials in advanced solid tumors in combination with other agents, including two Phase III trials in hormone receptor-positive advanced breast cancer.
- BYM338 (bimagrumab) is a novel, fully human monoclonal antibody under development to treat sporadic inclusion body myositis (sIBM). In August 2013, FDA granted Breakthrough Therapy designation to BYM338 for sIBM. A Phase II/III study of bimagrumab in patients with sIBM was initiated in September 2013. This study showed that in sIBM patients, a single dose of bimagrumab improved muscle volume in eight weeks (muscle volume for right leg increased 6.5% compared to placebo) and muscle function by 16 weeks. BYM338 binds with high affinity to type II activin receptors, preventing natural ligands, including myostatin and activin, from binding. BYM338 stimulates muscle growth by blocking signaling from these inhibitory molecules. In addition to sIBM, BYM338 is in clinical development for multiple pathological muscle loss and weakness and muscle-wasting conditions, including recovery from hip fracture. BYM338 was developed by Novartis, in collaboration with MorphoSys.
- *Cosentyx* (AIN457, secukinumab) is a fully human IgG1 monoclonal antibody that selectively binds to and neutralizes IL-17A, a key pro-inflammatory cytokine. In September 2014 Novartis announced that two Phase III studies in psoriatic arthritis (FUTURE 1 and FUTURE 2) met primary and key secondary endpoints showing superiority to placebo. FUTURE 1 and FUTURE 2 enrolled a combined total of more than 1,000 patients.
- CTL019 (tisagenlecleucel-T) is an investigational therapy that uses chimeric antigen receptors (CARs) to fight cancer. CARs are engineered proteins that transform a patient's own T cells into antigen-specific cells which seek out target proteins present on a patient's cancerous tumor. When these cells are re-introduced into the patient's blood, they demonstrate the potential to bind to the cancer cells and destroy them. CTL019 targets a protein called CD19 that is associated with a number of B-cell malignancies. On-going Phase I and II studies being conducted by the University of Pennsylvania are investigating the activity and safety of CTL019 in patients with resistant or refractory CD19+ hematologic malignancies, specifically acute lymphoblastic leukemia, chronic lymphocytic leukemia and non-Hodgkin lymphoma. In one long-term pediatric study, results showed that 36 of 39 patients with relapsed/refractory acute lymphoblastic leukemia (r/r ALL), or 92%, experienced complete remissions with CTL019. Sustained remissions were achieved up to one year or more with six-month event-free survival of 70% and overall survival of 75%, in most cases without further therapy. All pediatric patients who responded to the therapy experienced a cytokine release syndrome, while their reprogrammed T-cells were expanding. Additional abstracts

evaluated the efficacy and safety of CTL019 in the treatment of B-cell cancers including r/r ALL, chronic lymphocytic leukemia, and B-cell non-Hodgkin lymphoma.

- *Gilenya* (fingolimod) is a sphingosine 1-phosphate receptor modulator approved for the treatment for relapsing remitting MS. A Phase III study of *Gilenya* in patients with chronic inflammatory demyelinating polyradiculoneuropathy was initiated in 2012. Submissions to health authorities in this indication are anticipated to be made in 2017. Results from INFORMS, the Phase III study of *Gilenya* in primary progressive MS did not show a significant difference between fingolimod and placebo on a combination of disability measures.
- *Jakavi* (ruxolitinib) is an oral inhibitor of the JAK1 and JAK2 tyrosine kinases in development for use in patients with polycythemia vera. The pivotal Phase III RESPONSE study of ruxolitinib in patients with polycythemia vera who are resistant to or intolerant of hydroxyurea was presented at a major US medical congress in 2014. In the study, ruxolitinib significantly improved hematocrit control without the need for phlebotomy and reduced spleen size in patients with polycythemia vera who are resistant to or intolerant of hydroxyurea. These data form the basis for worldwide regulatory filings for ruxolitinib in polycythemia vera. An update involving more than 1,000 patients from the Phase IIIb JUMP study, the largest clinical trial of myelofibrosis patients treated with ruxolitinib to date, was presented at a major US medical congress in 2014. Findings of this ongoing expanded access study support the safety profile and efficacy benefit of ruxolitinib, as measured in primary and secondary endpoints respectively. In the study, 69% of patients treated with ruxolitinib achieved a greater than or equal to 50% reduction in spleen length from baseline at any time and had a clinically meaningful improvement in myelofibrosis symptom score, important treatment goals for patients with myelofibrosis.
- LBH589 (panobinostat) is a potent pan-deacetylase inhibitor under FDA review for the treatment of patients with relapsed or relapsed and refractory multiple myeloma. In November, the FDA extended its review period by up to three months for the NDA of LBH589 in combination with bortezomib and dexamethasone for patients with previously treated multiple myeloma. The extension followed an FDA Oncologic Drugs Advisory Committee (ODAC) meeting in November, at which ODAC voted against recommending LBH589 for this indication. Results from the PANORAMA-1 (PANobinostat ORAl in Multiple MyelomA) Phase III trial, which were presented at a major US medical congress, showed a 37% improvement in progression-free survival when using panobinostat in combination with bortezomib and dexamethasone compared to treatment with the same regimen with placebo in patients with relapsed or relapsed and refractory multiple myeloma. Worldwide regulatory filings are underway, including filings in the EU in May and in Japan, with orphan drug status, in September.
- LCQ908 (pradigastat) is a diacylglycerol acyltransferase-1 (DGAT-1) inhibitor that blocks the final step of triglyceride synthesis in the small intestine, slowing and decreasing absorption of dietary fat. LCQ908 is currently in Phase III development for familial chylomicronemia syndrome, a rare genetic disease in which individuals lack an enzyme that clears triglycerides from the blood. The loss of this enzyme activity leads to very high triglycerides, which can lead to recurrent episodes of a potentially life-threatening condition called pancreatitis.
- LCZ696 (valsartan and sacubitril, as sodium salt complex) is a first-in-class angiotensin receptor/neprilysin inhibitor in development for the treatment of chronic heart failure. LCZ696 acts to enhance the protective neurohormonal systems of the heart (neprilysin system) while simultaneously suppressing the harmful system (the renin-angiotensin-aldosterone system, or RAAS). In March 2014 the Phase III PARADIGM-HF study of LCZ696 in patients with chronic heart failure with reduced ejection fraction was stopped early when it was confirmed that those given LCZ696 were significantly less likely to die from cardiovascular causes then those given enalapril. Results presented at a major European medical congress in August 2014 showed LCZ696 reduced the risk of death from cardiovascular causes by 20%, reduced heart failure hospitalizations

by 21% and the risk of all-cause mortality by 16%. Overall there was a 20% risk reduction on the primary endpoint, a composite measure of cardiovascular death or heart failure hospitalization. Based on these findings, regulatory applications have been submitted in both the EU and US for LCZ696 as a treatment for patients with heart failure with reduced ejection fraction. PARAGON-HF, a Phase III trial of LCZ696 in patients with chronic heart failure with preserved ejection fraction is underway.

- LDE225 (sonidegib) is a selective smoothened inhibitor in clinical development for advanced basal cell carcinoma. LDE225 binds to smoothened receptors and prevents abnormal activation of the Hedgehog pathway, which is associated with uncontrolled cellular growth and proliferation. LDE225 was submitted in the EU in the second quarter of 2014 and in the US in the third quarter of 2014.
- LEE011 (ribociclib) is an orally bioavailable, highly selective small molecule inhibitor of cyclin dependent kinase (CDK) 4 and 6. LEE011 may be able to stop the proliferation of growth factors in tumors where the CDK4/6 pathway has been activated and unchecked cell proliferation has occurred. The compound is in Phase III registration studies in hormone receptor-positive advanced breast cancer. LEE011 is also in Phase I and II investigation, with a number of ongoing studies in adult and pediatric solid tumors.
- *Lucentis* (ranibizumab) is an anti-VEGF monoclonal antibody fragment in Phase III development for the treatment of visual impairment due to choroidal neovascularization and macular edema secondary to conditions other than age-related macular degeneration, diabetic macular edema, branch and central retinal vein occlusion and pathologic myopia. Filings are expected in 2016.
- OAP030 (*Fovista*) is an oligo-nucleotide aptamer that inhibits the action of platelet-derived growth factor (PDGF), and has the potential to enhance the symptomatic treatment effect of anti-VEGFs to induce lesion regression, which may result in vision gains, reduce vision loss and potentially modify the disease in the longer term. The OAP030 Phase III program consists of three clinical trials to evaluate the safety and efficacy of OAP030 in combination with anti-VEGF drugs for the treatment of wet age-related macular degeneration (AMD). Initial top-line data from the OAP030 Phase III clinical program are expected to be available in 2016.
- PKC412 (midostaurin) is an oral, multi-targeted kinase inhibitor in Phase III development for treatment of patients with FLT3-mutated acute myeloid leukemia (AML) and in Phase II development for aggressive systemic mastocytosis (ASM). Filings are expected for newly diagnosed, FLT3-mutated AML and for ASM in 2015.
- RLX030 (serelaxin), the first in a new class of medicines, is a recombinant form of the human hormone relaxin-2, and is believed to act through multiple mechanisms on the heart, kidneys and blood vessels. Results from the Phase III RELAX-AHF study show that RLX030 improved symptoms and reduced mortality in patients with acute heart failure (AHF). Data from the study were presented at the American Heart Association congress in November 2012 and published simultaneously in *The Lancet* showing that RLX030 significantly reduced dyspnea (or shortness of breath), the most common symptom of AHF, which was the primary objective of the study based on pre-specified protocol criteria. In addition, RLX030 was associated with reductions in worsening of heart failure and all-cause mortality (a safety endpoint) and in deaths due to cardiovascular causes (an additional pre-specified exploratory endpoint) at the end of six months. In 2014, the FDA and CHMP each decided that further data would be required in order for marketing authorizations to be granted. A second Phase III study, RELAX-AHF-2, is underway and aims to replicate the key findings of RELAX-AHF, with cardiovascular mortality as the primary endpoint. RLX030 received regulatory approval from the Ministry of Health in Russia in 2014 and is launched there under the trade name *Reasanz*.

- *Seebri* (NVA237, glycopyrronium bromide) is an inhaled long-acting muscarinic antagonist. In January 2015, Novartis announced positive top-line results from the pivotal Phase III clinical trial programs for NVA237 to support an NDA submission to FDA for the long-term maintenance treatment of chronic obstructive pulmonary disease (COPD). The results from the Phase III GEM clinical trial program in moderate-to-severe COPD patients met their primary and secondary endpoints.
- *Signifor* LAR (SOM230, pasireotide) is a somatostatin analogue in development as a long-acting release formulation for patients with Cushing's disease, with a Phase III study underway.
- *Tasigna* (nilotinib) is a selective tyrosine-kinase inhibitor that inhibits the BCR-ABL protein produced by the Philadelphia chromosome, which is found in most people who have chronic myeloid leukemia (CML). Novartis has initiated a global clinical trial program to evaluate the potential for Philadelphia chromosome positive (Ph+) CML patients to maintain deep molecular response after stopping nilotinib. ENESTfreedom, ENESTop, ENESTgoal, and ENESTpath will evaluate the feasibility of stopping treatment, and achieving successful treatment free remission in patients with Ph+ CML in the chronic phase and deep molecular response on nilotinib. ENESTfreedom and ENESTop are pivotal trials and have completed enrollment. Six-year results from the ongoing randomized Phase III ENESTnd study demonstrate that *Tasigna* is superior to *Gleevec*/*Glivec* at achieving higher rates of early, deep and sustained molecular responses in newly-diagnosed patients with Philadelphia chromosome-positive chronic myeloid leukemia.
- *Ultibro* (QVA149, indacaterol and glycopyrronium bromide) is an inhaled fixed-dose combination of the long-acting beta$_2$-adrenergic agonist indacaterol and the long-acting muscarinic antagonist glycopyrronium bromide. In January 2015, Novartis announced positive top-line results from the pivotal Phase III clinical trial programs for QVA149 to support an NDA submission to the FDA for the long-term maintenance treatment of COPD. The results from the Phase III EXPEDITION clinical trial program in moderate-to-severe COPD patients met their primary and secondary endpoints.
- *Zykadia* (LDK378, ceritinib) is a potent and highly selective oral anaplastic lymphoma kinase (ALK) inhibitor that is in development for ALK positive (ALK+) cancers. Several major studies evaluating treatment with ceritinib are being conducted in more than 300 study centers across more than 30 countries. Two Phase II single-arm clinical trials in previously treated and treatment-naïve ALK+ non-small cell lung cancer (NSCLC) patients are fully enrolled and ongoing. In addition, two Phase III clinical trials comparing ceritinib with chemotherapy in treatment-naïve and in previously-treated NSCLC patients are ongoing and actively recruiting patients worldwide.

Projects Added To And Subtracted From The Development Table Since 2013

Project/Product	Potential indication/ Disease area	Change	Reason
ACZ885	Gouty arthritis	Commercialized (EU) Terminated (US)	US development discontinued
Afinitor/Votubia (RAD001)	HER2+ breast cancer, 1st line	Terminated	Development discontinued
	HER2+ breast cancer, 2nd/3rd line	Terminated	Development discontinued
AFQ056	Fragile X syndrome	Terminated	Development discontinued
Cosentyx (AIN457)	Psoriasis	Commercialized	
	Rheumatoid arthritis	Terminated	Development discontinued
	Uveitis	Terminated	Development discontinued
AUY922	Solid tumors	Terminated	Development discontinued
BKM120	Breast cancer	Now disclosed as metastatic breast cancer, hormone receptor-positive, aromatase inhibitor resistant, mTOR inhibitor naïve; and metastatic breast cancer, hormone receptor-positive, aromatase inhibitor and mTOR inhibitor resistant	
BYM338	Sarcopenia	Added	Entered Confirmatory Development
CJM112	Immune disorders	Added	Entered Confirmatory Development
CTL019	Leukemia	Now disclosed as adult and pediatric acute lymphoblastic leukemia	
	Diffuse large B-cell lymphoma	Added	Entered Confirmatory Development
DEB025	Chronic hepatitis C	Removed	Hepatitis C virus strategy review

Project/Product	Potential indication/ Disease area	Change	Reason
EGF816	Solid tumors	Added	Entered Confirmatory Development
Exjade film-coated tablet	Iron overload	Added	In registration in US
FCR001	Renal transplant	Added	Entered Confirmatory Development
Gilenya	Primary progressive multiple sclerosis	Terminated	Development discontinued
INC280	Non-small cell lung cancer	Added	Entered Confirmatory Development
KAF156	Malaria	Added	Entered Confirmatory Development
LBH589	Hematological cancers	Terminated	Development discontinued
LCZ696	Hypertension	Removed	Activities for submission on hold
LDE225	Medulloblastoma	Removed	No filing planned
	Solid tumors	Removed	No filing planned
LEE011	Breast cancer	Now disclosed as hormone receptor-positive, HER2 negative advanced breast cancer (postmenopausal women) and hormone receptor-positive, HER2 negative advanced breast cancer (premenopausal women)	
LFF571	*Clostridium difficile* infection	Terminated	Development discontinued
LGX818	BRAF mutant melanoma	Terminated	Development discontinued in BRAF mutant melanoma as a single agent

Project/Product	Potential indication/ Disease area	Change	Reason
Lucentis	Choroidal neovascularization and macular edema	Now disclosed as choroidal neovascularization and macular edema secondary to conditions other than age-related macular degeneration, diabetic macular edema, retinal vein occlusion and pathologic myopia	
	Retinopathy of Prematurity (ROP)	Added	Entered Confirmatory Development
OAP030 (*Fovista*)	Wet age-related macular degeneration	Added	Entered confirmatory development; licensing and commercialization agreement with Ophthotech signed May 2014
QAW039	Atopic dermatitis	Added	Entered Confirmatory Development
QGE031	Allergic diseases	Now disclosed as asthma	
Seebri (NVA237)	Asthma	Terminated	Development discontinued
Signifor LAR (SOM230)	Acromegaly	Commercialized	
TKI258	Solid tumors	Terminated	Development discontinued
Xolair	Chronic idiopathic urticaria/ Chronic spontaneous urticaria	Commercialized	

Principal Markets

The Pharmaceuticals Division sells products in approximately 155 countries worldwide. Net sales are generally concentrated in the US, Europe and Japan, which together accounted for 75% of the division's 2014 net sales. However, sales from expanding "emerging growth markets" have become increasingly important to us. See "Item 5. Operating and Financial Review and Prospects—5.A Operating Results—Factors Affecting Results of Operations—Transformational Changes Fueling Demand—Global Rise in

Healthcare Spending." The following table sets forth the aggregate 2014 net sales of the Pharmaceuticals Division by region:

	2014 Net sales to third parties	
Pharmaceuticals		
	$ millions	**%**
Europe	11,245	35
United States	9,772	31
Asia, Africa, Australasia	7,655	24
Canada and Latin America	3,119	10
Total	**31,791**	**100**
	$ millions	**%**
Established Markets*	23,653	74
Emerging Growth Markets*	8,138	26
Total	**31,791**	**100**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Many of our Pharmaceuticals Division's products are used for chronic conditions that require patients to consume the product over long periods of time, ranging from months to years. Net sales of the vast majority of our products are not subject to material changes in seasonal demand.

Production

The primary goal of our manufacturing and supply chain management program is to ensure the uninterrupted, timely and cost-effective supply of products that meet all product specifications. We manufacture our products at five bulk chemical and 14 pharmaceutical production facilities as well as one biotechnology site. Bulk chemical production involves the manufacture of therapeutically active compounds, mainly by chemical synthesis or by biological processes such as fermentation. Pharmaceutical production involves the manufacture of "galenical" forms of pharmaceutical products such as tablets, capsules, liquids, ampoules, vials and creams. Major bulk chemical sites are located in Schweizerhalle, Switzerland; Grimsby, UK; Ringaskiddy, Ireland and Changshu, China. Significant pharmaceutical production facilities are located in Stein, Switzerland; Wehr, Germany; Singapore; Torre, Italy; Barbera, Spain; Suffern, New York; Sasayama, Japan and in various other locations. We have a biotechnology plant located in Huningue, France, and another biotechnology plant is under development in Morris Plains, New Jersey to manufacture personalized medicine. Our biotechnology site in Basel, Switzerland was closed in 2014, and our biotechnology site in Vacaville, California was transferred to Novartis Animal Health in October 2014. In January 2014, we announced the closing of the production facility located in Suffern, New York. In addition, in 2014 we announced the planned divestment of our pharmaceutical manufacturing site in Taboão da Serra, Brazil.

During clinical trials, which can last several years, the manufacturing process for a particular product is rationalized and refined. By the time clinical trials are completed and products are launched, the manufacturing processes have been extensively tested and are considered stable. However, improvements to these manufacturing processes may continue over time.

Raw materials for the manufacturing process are either produced in-house or purchased from a number of third party suppliers. Where possible, we maintain multiple supply sources so that the business

is not dependent on a single or limited number of suppliers. However, our ability to do so may at times be limited by regulatory or other requirements. We monitor market developments that could have an adverse effect on the supply of essential materials. Our suppliers of raw materials are required to comply with Novartis quality standards.

The manufacture of our products is complex and heavily regulated by governmental health authorities, which means that supply is never guaranteed. If we or our third party suppliers fail to comply with applicable regulations then there could be a product recall or other shutdown or disruption of our production activities. We have implemented a global manufacturing strategy to maximize business continuity in case of such events or other unforeseen catastrophic events. However, there can be no guarantee that we will be able to successfully manage such issues when they arise.

Marketing and Sales

The Pharmaceuticals Division serves customers with 1,940 field force representatives in the US, and an additional 20,643 in the rest of the world, as of December 31, 2014, including supervisors and administrative personnel. These trained representatives, where permitted by law, present the therapeutic risks and benefits of our products to physicians, pharmacists, hospitals, insurance groups and managed care organizations. We are seeing the increasing influence of customer groups beyond the prescribers, and Novartis is responding by adapting our business practices.

Although specific distribution patterns vary by country, Novartis generally sells its prescription drugs primarily to wholesale and retail drug distributors, hospitals, clinics, government agencies and managed healthcare providers.

In the US, certain products can be advertised by way of television, newspaper and magazine advertising. Novartis also pursues co-promotion/co-marketing opportunities as well as licensing and distribution agreements with other companies when legally permitted and economically attractive.

The marketplace for healthcare is evolving with consumers becoming more informed stakeholders in their healthcare decisions and looking for solutions to meet their changing needs. Where permitted by law, Novartis is seeking to tap into the power of the patient, delivering innovative solutions to drive loyalty and engagement.

As a result of changes in healthcare economics, managed care organizations are now one of the largest groups of payors for healthcare services in the US. In an effort to control prescription drug costs, almost all managed care organizations use a formulary that lists specific drugs that can be prescribed and/or the amount of reimbursement for each drug. We have a dedicated managed care team that actively seeks to optimize formulary positions for our products.

Competition

The global pharmaceutical market is highly competitive, and we compete against other major international corporations which sell patented prescription pharmaceutical products, and which have substantial financial and other resources. Competition within the industry is intense and extends across a wide range of commercial activities, including pricing, product characteristics, customer service, sales and marketing, and research and development.

In addition, as is the case with other pharmaceutical companies selling patented pharmaceuticals, Novartis faces ever-increasing challenges from companies selling products which compete with our products, including competing patented products and generic forms of our products following the expiry of patent protection. Generic companies may also gain entry to the market through successfully challenging our patents, but we vigorously use legally permissible measures to defend our patent rights. We also face competition from over-the-counter (OTC) products that do not require a prescription from a physician. See also "—Regulation—Price Controls", below.

Research and Development

We are a leader in the pharmaceuticals industry in terms of research and development, including the level of our investment. Our Pharmaceuticals Division invested the following in research and development over the last three years:

	2014		2013		2012	
	$ millions	Core R&D[(1)] $ millions	$ millions	Core R&D[(1)] $ millions	$ millions	Core R&D[(1)] $ millions
Research and Exploratory Development . .	2,724	2,654	2,664	2,611	2,584	2,530
Confirmatory Development . .	4,607	4,343	4,578	4,550	4,334	4,167
Total	**7,331**	**6,997**	**7,242**	**7,161**	**6,918**	**6,697**

(1) Core excludes impairments, amortization and certain exceptional items

Our Pharmaceuticals Division expensed $7.3 billion (on a core basis $7.0 billion) in research and development in 2014. This represented 23% (on a core basis 22%) of the division's total net sales.

Research and Exploratory Development expenditure was $2.7 billion in 2014, in line with the Research and Exploratory Development expenditure of $2.7 billion in 2013 and the 2012 amount of $2.6 billion.

Confirmatory Development expenditures in 2014 were $4.6 billion, in line with 2013. This included $289 million in impairments of intangible assets in 2014 (2013: $29 million). On a core basis, Confirmatory Development expenditures decreased to $4.3 billion in 2014 and represented 14% of our Pharmaceuticals Division's net sales.

Confirmatory Development expenditures in 2013 increased by 6% to $4.6 billion as compared against 2012. This included $29 million in impairments of intangible assets in 2013 (2012: $0.1 billion). On a core basis, Confirmatory Development expenditures increased to $4.6 billion in 2013 (2012: $4.2 billion) and represented 14% of our Pharmaceuticals Division's net sales.

The discovery and development of a new drug is a lengthy process, usually requiring approximately 10 to 15 years from the initial research to bringing a drug to market, including approximately six to eight years from Phase I clinical trials to market entry. At each of these steps, there is a substantial risk that a compound will not meet the requirements to progress further. In such an event, we may be required to abandon a compound in which we have made a substantial investment.

We manage our research and development expenditures across our entire portfolio in accordance with our strategic priorities. We make decisions about whether or not to proceed with development projects on a project-by-project basis. These decisions are based on the project's potential to meet a significant unmet medical need or to improve patient outcomes, the strength of the science underlying the project, and the potential of the project (subject to the risks inherent in pharmaceutical development) to generate significant positive financial results for the Company. Once a management decision has been made to proceed with the development of a particular molecule, the level of research and development investment required will be driven by many factors, including the medical indications for which it is being developed, the number of indications being pursued, whether the molecule is of a chemical or biological nature, the stage of development, and the level of evidence necessary to demonstrate clinical efficacy and safety.

Research program

Our Research program is responsible for the discovery of new medicines. The principal goal of our research program is to discover new medicines for diseases with unmet medical need. To do this we focus our work in areas where we have sufficient scientific understanding and believe we have the potential to change the practice of medicine. This requires the hiring and retention of the best talent, a focus on fundamental disease mechanisms that are relevant across different disease areas, continuous improvement in technologies for drug discovery and potential therapies, close alliance with clinical colleagues, and the establishment of appropriate external complementary alliances.

All drug candidates are taken to the clinic via "proof-of-concept" trials to enable rapid testing of the fundamental efficacy of the drug while collecting basic information on pharmacokinetics, safety and tolerability, and adhering to the guidance for early clinical testing set forth by health authorities.

In 2003, we established the Novartis Institutes for BioMedical Research (NIBR). At NIBR's headquarters in Cambridge, Massachusetts, more than 1,900 scientists, physicians and business professionals contribute to research into disease areas such as cardiovascular and metabolism disease, neuroscience, oncology, muscle disorders and ophthalmology. Additionally, more than 4,300 scientists, physicians and business professionals contribute to research in Switzerland, Italy, Singapore, China and three other US sites. Research is conducted at these sites in areas including neuroscience, autoimmune diseases, oncology, cardiovascular and metabolism diseases, and gastrointestinal diseases. Research platforms such as the Center for Proteomic Chemistry are headquartered at the NIBR site in Basel, Switzerland. In addition, the Novartis Institute for Tropical Diseases, Novartis Vaccines for Global Health, the Friedrich Miescher Institute, and the Genomics Institute of the Novartis Research Foundation, focus on basic genetic and genomic research as well as research into diseases of the developing world such as malaria, dengue and African sleeping sickness.

In August 2012, Novartis and the University of Pennsylvania (Penn) announced an exclusive global research and development collaboration to develop and commercialize targeted chimeric antigen receptor (CAR) immunotherapies for the treatment of cancers. The research component of this collaboration focuses on accelerating the discovery and development of additional therapies using CAR immunotherapy. In September, as part of its alliance with Novartis, Penn announced plans for the construction of a Center for Advanced Cellular Therapeutics (CACT) on the Penn Medical School campus in Philadelphia. The CACT is planned to be a first of its kind research and development center established specifically to develop and manufacture adoptive T cell immunotherapies under the research collaboration guided by scientists and clinicians from NIBR and Penn. Construction of the CACT is expected to be completed in 2016.

In April 2013, we announced that ophthalmic pharmaceuticals research would be consolidated in Cambridge, Massachusetts. Previously this research was conducted at two sites—on the Alcon campus in Fort Worth, Texas, and in Cambridge, Massachusetts. This consolidation is part of our ongoing effort to co-locate teams and pursue new scientific directions.

In August 2013, we announced that we will build a neuroscience research team in Cambridge. This new group will focus on using stem cell models, human genetics, and other fields to discover new medicines for psychiatric and neurodegenerative diseases.

In November 2013, we took action to co-locate scientific resources in order to improve the efficiency and effectiveness of our global research organization. We announced that we will establish a respiratory research group at our site in Cambridge, Massachusetts, and a proposal to close the Horsham, UK research site, as well as a plan to exit research in topical applications for dermatology and exit from the Vienna, Austria research site. After the consultation period with local works councils in the UK and Austria, these proposals were confirmed and both sites were closed in 2014. In addition, we announced the consolidation of US-based oncology research from Emeryville, California to Cambridge, Massachusetts and the closing of the biotherapeutics development unit in La Jolla, California.

In February 2014 we acquired CoStim Pharmaceuticals Inc., a Cambridge, Massachusetts-based, privately held biotechnology company focused on harnessing the immune system to eliminate immune-blocking signals from cancer. This acquisition enhanced our late discovery stage immunotherapy programs directed to several targets, including PD-1.

Development program

The focus of our Development program is to determine the safety and efficacy of a potential new medicine in humans. As previously described (see "—Compounds in Development"), we view the development process as generally consisting of an Exploratory phase where "proof of concept" is established, and a Confirmatory phase where this concept is confirmed in large numbers of patients.

Within this paradigm, clinical trials of drug candidates generally proceed through the traditional three phases: I, II and III. In Phase I clinical trials, a drug is usually tested with about 5 to 15 patients. The tests study the drug's safety profile, including the safe dosage range. The studies also determine how a drug is absorbed, distributed, metabolized and excreted, and the duration of its action. In Phase II clinical trials, the drug is tested in controlled studies of approximately 100 to 300 volunteer patients to assess the drug's efficacy and safety, and to establish the appropriate therapeutic dose. In Phase III clinical trials, the drug is further tested in larger numbers of volunteer patients in clinics and hospitals. In each of these phases, physicians monitor volunteer patients closely to assess the potential new drug's safety and efficacy. The vast amount of data that must be collected and evaluated makes clinical testing the most time-consuming and expensive part of new drug development. The next stage in the drug development process is to seek registration for the new drug. See "—Regulation."

At each of these phases of clinical development, our activities are managed by our Innovation Management Board (IMB). The IMB is responsible for oversight over all major aspects of our development portfolio. In particular, the IMB is responsible for the endorsement of proposals to commence the first clinical trials of a development compound, and of major project phase transitions and milestones following a positive proof of concept outcome, including transitions to full development and the decision to submit a regulatory application to the health authorities. The IMB is also responsible for project discontinuations, for the endorsement of overall development strategy and the endorsement of development project priorities. The IMB is chaired by the Head of Development of our Pharmaceuticals Division and has representatives from Novartis senior management, as well as experts from a variety of fields among its core members and extended membership.

Cell and Gene Therapies Unit

Novartis Pharmaceuticals has created a dedicated unit focused on the development and commercialization of Cell and Gene Therapies. The Cell and Gene Therapies Unit aims to develop a new approach to treating or potentially curing some patients suffering from a variety of life-threatening diseases, including blood-borne cancers, sickle cell disease, thalassemias and other diseases of the blood by replacing, repopulating or resetting the immune system. The unit will initially focus on novel cell therapies and cell-based gene therapies including: Chimeric Antigen Receptor Technology (CART) in immuno-oncotherapy with CTL019, Facilitated Cell Therapy Platform (FCRx) in renal transplantation with FCR001 and stem cell expansion and transplantation with HSC835.

Diagnostics

Recent advances in biology and bioinformatics have led to a much deeper understanding of the underlying genetic drivers of disease and the molecular pathways cancer uses to progress. Novartis is developing new therapies that specifically target the mechanisms responsible for disease. To support these advances, Novartis is developing innovative diagnostic tests that could potentially improve physicians' ability to administer the appropriate treatment to those patients who have the greatest potential to benefit from them. Our Pharmaceuticals Division has two units that support our commitment to advancing precision medicine.

Companion Diagnostics

Our Companion Diagnostics (CDx) function works as an integrated part of the drug development process. CDx brings internal capabilities and resources to bear in the development of new diagnostic tests to support our global program teams and efforts in various disease areas. Additionally, the CDx team forms strategic collaborations with third parties to secure access to technologies and capabilities that fit the requirements of our drug development programs. The CDx unit develops tests to meet high regulatory standards for the approval of companion diagnostics around the world.

Genoptix Medical Laboratory

In 2011, Novartis acquired Genoptix Medical Laboratory, located in Carlsbad, California. This organization provides comprehensive diagnostics and informatics services to community-based hematologists and oncologists in the US. As one of the largest hematopathology centers in the US, Genoptix offers comprehensive testing solutions in hematology and solid tumor molecular profiling. Their mission is to create value for the patient and the healthcare system by transforming diagnostic information into actionable clinical insights. Genoptix also provides services to support Novartis and third-party clinical trials.

Alliances and acquisitions

Our Pharmaceuticals Division enters into business development agreements with other pharmaceutical and biotechnology companies and with academic institutions in order to develop new products and access new markets. We license products that complement our current product line and are appropriate to our business strategy. Therapeutic area strategies have been established to focus on alliances and acquisition activities for key disease areas and indications that are expected to be growth drivers in the future. We review products and compounds we are considering licensing using the same criteria as we use for our own internally discovered drugs.

Regulation

The international pharmaceutical industry is highly regulated. Regulatory authorities around the world administer numerous laws and regulations regarding the testing, approval, manufacturing, importing, labeling and marketing of drugs, and also review the safety and efficacy of pharmaceutical products. In particular, extensive controls exist on the non-clinical and clinical development of pharmaceutical products. These regulatory requirements, and the implementation of them by local health authorities around the globe, are a major factor in determining whether a substance can be developed into a marketable product, and the amount of time and expense associated with that development.

Health authorities, including those in the US, EU and Japan, have high standards of technical evaluation. The introduction of new pharmaceutical products generally entails a lengthy approval process. Of particular importance is the requirement in all major countries that products be authorized or registered prior to marketing, and that such authorization or registration be subsequently maintained. In recent years, the registration process has required increased testing and documentation for clearance of new drugs, with a corresponding increase in the expense of product introduction.

To register a pharmaceutical product, a registration dossier containing evidence establishing the quality, safety and efficacy of the product must be submitted to regulatory authorities. Generally, a therapeutic product must be registered in each country in which it will be sold. In every country, the submission of an application to a regulatory authority does not guarantee that approval to market the product will be granted. Although the criteria for the registration of therapeutic drugs are similar in most countries, the formal structure of the necessary registration documents and the specific requirements, including risk tolerance, of the local health authorities varies significantly from country to country. It is possible that a drug can be registered and marketed in one country while the registration authority in

another country may, prior to registration, request additional information from the pharmaceutical company or even reject the product. It is also possible that a drug may be approved for different indications in different countries.

The registration process generally takes between six months and several years, depending on the country, the quality of the data submitted, the efficiency of the registration authority's procedures and the nature of the product. Many countries provide for accelerated processing of registration applications for innovative products of particular therapeutic interest. In recent years, intensive efforts have been made among the US, the EU and Japan to harmonize registration requirements in order to achieve shorter development and registration times for medical products. However, the requirement in many countries to negotiate selling prices or reimbursement levels with government regulators can substantially extend the time until a product may finally be launched to the market.

The following provides a summary of the regulatory processes in the principal markets served by Pharmaceuticals Division affiliates:

United States

In the US, applications for drug registration are submitted to and reviewed by the FDA. The FDA regulates the testing, manufacturing, labeling and approval for marketing of pharmaceutical products intended for commercialization in the US. The FDA continues to monitor the safety of pharmaceutical products after they have been approved for sale in the US market. The pharmaceutical development and registration process is typically intensive, lengthy and rigorous. When a pharmaceutical company has gathered data which it believes sufficiently demonstrates a drug's quality, safety and efficacy, then the company may file a New Drug Application (NDA) or Biologics License Application (BLA), as applicable, for the drug. The NDA or BLA must contain all the scientific information that has been gathered about the drug and typically includes information regarding the clinical experiences of patients tested in the drug's clinical trials. A Supplemental New Drug Application (sNDA) or BLA amendment must be filed for new indications for a previously approved drug.

Once an NDA or BLA is submitted, the FDA assigns reviewers from its staff in biopharmaceutics, chemistry, clinical microbiology, pharmacology/toxicology, and statistics. After a complete review, these content experts then provide written evaluations of the NDA or BLA. These recommendations are consolidated and are used by senior FDA staff in its final evaluation of the NDA or BLA. Based on that final evaluation, the FDA then provides to the NDA or BLA's sponsor an approval, or a ''complete response'' letter if the NDA or BLA application is not approved. If not approved, the letter will state the specific deficiencies in the NDA or BLA which need to be addressed. The sponsor must then submit an adequate response to the deficiencies in order to restart the review procedure.

Once the FDA has approved an NDA, BLA, sNDA or BLA amendment, the company can make the new drug available for physicians to prescribe. The drug owner must submit periodic reports to the FDA, including any cases of adverse reactions. For some medications, the FDA requires additional post-approval studies (Phase IV) to evaluate long-term effects or to gather information on the use of the product under special conditions.

Throughout the life cycle of a product, the FDA also requires compliance with standards relating to good laboratory, clinical, manufacturing and promotional practices.

European Union

In the EU, there are three main procedures for application for authorization to market pharmaceutical products in the EU Member States, the Centralized Procedure, the Mutual Recognition Procedure and the Decentralized Procedure. It is also possible to obtain a national authorization for products intended for commercialization in a single EU member state only, or for additional indications for licensed products.

Under the Centralized Procedure, applications are made to the EMA for an authorization which is valid for the European Community. The Centralized Procedure is mandatory for all biotechnology products and for new chemical entities in cancer, neurodegenerative disorders, diabetes and AIDS, autoimmune diseases or other immune dysfunctions and optional for other new chemical entities or innovative medicinal products or in the interest of public health. When a pharmaceutical company has gathered data which it believes sufficiently demonstrates a drug's quality, safety and efficacy, then the company may submit an application to the EMA. The EMA then receives and validates the application, and appoints a Rapporteur and Co-Rapporteur to review it. The entire review cycle must be completed within 210 days, although there is a "clock stop" at day 120, to allow the company to respond to questions set forth in the Rapporteur and Co-Rapporteur's Assessment Report. When the company's complete response is received by the EMA, the clock restarts on day 121. If there are further aspects of the dossier requiring clarification, the EMA will then request an Oral Explanation on day 180, in which the sponsor must appear before the CHMP to provide the requested additional information. On day 210, the CHMP will then take a vote to recommend the approval or non-approval of the application. The final decision under this Centralized Procedure is an EU Community decision which is applicable to all Member States. This decision occurs on average 60 days after a positive CHMP recommendation.

Under the Mutual Recognition Procedure (MRP), the company first obtains a marketing authorization from a single EU member state, called the Reference Member State (RMS). In the Decentralized Procedure (DCP) the application is done simultaneously in selected or all Member States if a medicinal product has not yet been authorized in a Member State. During the DCP, the RMS drafts an Assessment Report within 120 days. Within an additional 90 days the Concerned Member States (CMS) review the application and can issue objections or requests for additional information. On Day 90, each CMS must be assured that the product is safe and effective, and that it will cause no risks to the public health. Once an agreement has been reached, each Member State grants national marketing authorizations for the product.

After the Marketing Authorizations have been granted, the company must submit periodic safety reports to the EMA (if approval was granted under the Centralized Procedure) or to the National Health Authorities (if approval was granted under the DCP or the MRP). In addition, several pharmacovigilance measures must be implemented and monitored including Adverse Event collection, evaluation and expedited reporting and implementation, as well as update Risk Management Plans.

European Marketing Authorizations have an initial duration of five years. After this time, the Marketing Authorization may be renewed by the competent authority on the basis of re-evaluation of the risk/benefit balance. Once renewed the Marketing Authorization is valid for an unlimited period. Any Marketing Authorization which is not followed within three years of its granting by the actual placing on the market of the corresponding medicinal product ceases to be valid.

Japan

In Japan, applications for new products are made through the Pharmaceutical and Medical Devices Agency (PMDA). Once an NDA is submitted, a review team is formed consisting of specialized officials of the PMDA, including chemistry/manufacturing, non-clinical, clinical and biostatistics. While a team evaluation is carried out, a data reliability survey and Good Clinical Practice/Good Laboratory Practice/ Good Manufacturing Practice inspection are carried out by the Office of Conformity Audit and Office of GMP/GQP Inspection of the PMDA. Team evaluation results are passed to the PMDA's external experts who then report back to the PMDA. After a further team evaluation, a report is provided to the Ministry of Health, Labor and Welfare (MHLW), which makes a final determination for approval and refers this to the Council on Drugs and Foods Sanitation which then advises the MHLW on final approvability. Marketing and distribution approvals require a review to determine whether or not the product in the application is suitable as a drug to be manufactured and distributed by a person who has obtained a

manufacturing and distribution business license for the type of drug concerned and confirmation that the product has been manufactured in a plant compliant with Good Manufacturing Practices.

Once the MHLW has approved the application, the company can make the new drug available for physicians to prescribe. After that, the MHLW lists its national health insurance price within 60 days (or 90 days) from the approval, and physicians can obtain reimbursement. For some medications, the MHLW requires additional post-approval studies (Phase IV) to evaluate safety, effects and/or to gather information on the use of the product under special conditions. The MHLW also requires the drug's sponsor to submit periodic safety update reports. Within three months from the specified re-examination period, which is designated at the time of the approval of the application for the new product, the company must submit a re-examination application to enable the drug's safety and efficacy to be reassessed against approved labeling by the PMDA.

Price Controls

In most of the markets where we operate, the prices of pharmaceutical products are subject to both direct and indirect price controls and to drug reimbursement programs with varying price control mechanisms. Due to increasing political pressure and governmental budget constraints, we expect these mechanisms to continue to remain robust—and to perhaps even be strengthened—and to have a negative influence on the prices we are able to charge for our products.

Direct efforts to control prices

United States. In the US, as a result of the Patient Protection and Affordable Care Act (ACA) and the recurring focus on deficit reduction, there is a significant risk of continued actions to control prices. Specifically, one proposal that has been repeatedly advanced would impose a government-mandated pricing formula on both patented and generic medications provided through the Medicare prescription drug benefit (Medicare Part D). In addition, the ACA mandated the creation of a new entity, the Independent Payment Advisory Board, which has been granted unprecedented authority to implement broad actions to reduce future costs of the Medicare program. This could include required prescription drug discounts or rebates, which could limit net prices for our products. There is a risk that government officials will continue to search for ways to reduce or control prices.

Europe. In Europe, our operations are subject to significant price and marketing regulations. Many governments are introducing healthcare reforms in a further attempt to curb increasing healthcare costs. In the EU, governments influence the price of pharmaceutical products through their control of national healthcare systems that fund a large part of the cost of such products to consumers. The downward pressure on healthcare costs in general in the EU, particularly with regard to prescription drugs, has become very intense. Increasingly high barriers are being erected against the entry of new products, and payors are limiting access to innovative medicines based on cost-benefit analyses. In addition, prices for marketed products are referenced within Member States and across Member State borders, including new EU Member States.

Japan. In Japan, the government generally introduces price cuts every other year, and the government additionally mandates price decreases for specific products. In 2014, the National Health Insurance price calculation method for new products and the price revision rule for existing products were reviewed, and the resulting new drug tariffs became effective beginning April 2014. The Japanese government is currently undertaking a healthcare reform initiative with a goal of sustaining the universal coverage of the National Health Insurance program, and is addressing the efficient use of drugs, including promotion of generic use. Meanwhile, the government tentatively initiated a premium system which basically maintains the price of patented drugs for unmet medical needs in order to promote innovative new drug creation and the solution of the unapproved indication issue. The continuance of this system will be reviewed as a part of price reforms in 2016.

Rest of World. Many other countries around the world are also taking steps to rein in prescription drug prices. As an example, China, one of our most important emerging growth markets, has ordered price cuts on drugs five times since 2011, including 2013 price cuts of up to 20%.

Regulations favoring generics

In response to rising healthcare costs, many governments and private medical care providers, such as Health Maintenance Organizations, have instituted reimbursement schemes that favor the substitution of generic pharmaceuticals for more expensive brand-name pharmaceuticals. In the US, generic substitution statutes have been enacted by virtually all states and permit or require the dispensing pharmacist to substitute a less expensive generic drug instead of an original patented drug. Other countries have similar laws, including numerous European countries. We expect that the pressure for generic substitution will continue to increase.

Cross-Border Sales

Price controls in one country can also have an impact in other countries as a result of cross-border sales. In the EU, products which we have sold to customers in countries with stringent price controls can in some instances legally be re-sold to customers in other EU countries with less stringent price controls at a lower price than the price at which the product is otherwise available in the importing country. In North America, products which we have sold to customers in Canada, which has relatively stringent price controls, are sometimes re-sold into the US, again at a lower price than the price at which the product is otherwise sold in the US. Such imports from Canada and other countries into the US are currently illegal.

We expect that pressures on pricing will continue worldwide, and may increase. Because of these pressures, there can be no certainty that, in every instance, we will be able to charge prices for a product that, in a particular country or in the aggregate, would enable us to earn an adequate return on our investment in that product.

Intellectual Property

We attach great importance to patents, trademarks, copyrights and know-how, including research data, in order to protect our investment in research and development, manufacturing and marketing. It is our policy to seek the broadest protection available under applicable laws for significant product developments in all major markets. Among other things, patents may cover the products themselves, including the product's active ingredient and its formulation. Patents may cover processes for manufacturing a product, including processes for manufacturing intermediate substances used in the manufacture of the products. Patents may also cover particular uses of a product, such as its use to treat a particular disease, or its dosage regimen. In addition, patents may cover assays or tests for certain diseases or biomarkers, which will improve patient outcomes when administered certain drugs, as well as assays, research tools and other techniques used to identify new drugs. The protection offered by such patents extends for varying periods depending on the grant and duration of patents in the various countries or region. The protection afforded, which may vary from country to country, depends upon the type of patent and its scope of coverage.

In addition to patent protection, various countries offer data or marketing exclusivities for a prescribed period of time. Data exclusivity may be available which would preclude a potential competitor from filing a regulatory application for a set period of time that relies on the sponsor's clinical trial data, or the regulatory authority from approving the application. The data exclusivity period can vary depending upon the type of data included in the sponsor's application. When it is available, market exclusivity, unlike data exclusivity, precludes a competitor from obtaining marketing approval for a product even if a competitor's application relies on its own data.

United States

Patents

In the US, a patent issued for an application filed today will receive a term of 20 years from the application filing date, subject to potential adjustments for Patent Office delay. A US pharmaceutical patent which claims a product, method of treatment using a product, or method of manufacturing a product, may be eligible for an extension of the patent term based on the time the FDA took to approve the product. This type of extension may only extend the patent term for a maximum of 5 years, and may not extend the patent term beyond 14 years from regulatory approval. Only one patent may be extended for any product based on FDA delay.

In practice, however, it is not uncommon for significantly more than the 5 year maximum patent extension period to pass between the time that a patent application is filed for a product and the time that the product is approved by the FDA. As a result, it is rarely the case that, at the time a product is approved by FDA, it will have the full 20 years of remaining patent life. Rather, in our experience, it is not uncommon that, at the date of approval, a product will have from 13 to 16 years of patent life remaining, including all extensions available at that time.

Data and Market Exclusivity

In addition to patent exclusivities, the FDA may provide data or market exclusivity for a new chemical entity or an ''orphan drug,'' each of which run in parallel to any patent protection. Data exclusivity prevents a potential generic competitor from relying on clinical trial data which were generated by the sponsor when establishing the safety and efficacy of its competing product. Market exclusivity prohibits any marketing of the same drug for the same indication.

- A new small-molecule active pharmaceutical ingredient shall have 5 years of data exclusivity, during which time a competitor generally may not submit an application to the FDA based on a sponsor's clinical data.
- Orphan drug exclusivity provides 7 years of market exclusivity for drugs designated by the FDA as ''orphan drugs,'' meaning drugs that treat rare diseases, as designated by the FDA. During this period, a potential competitor may not market the same drug for the same indication even if the competitor's application does not rely on data from the sponsor.
- A new biologic active pharmaceutical ingredient shall have 12 years of market exclusivity, during which time a competitor may not market the same drug for the same indication.
- The FDA may also request that a sponsor conduct pediatric studies, and in exchange will grant an additional 6-month period of market exclusivity, if the FDA accepts the data, the sponsor makes a timely application for approval for pediatric treatment, and the sponsor has either a patent-based or regulatory-based exclusivity period for the product which can be extended.

European Community

Patents

Patent applications in Europe may be filed in the European Patent Office (EPO) or in a particular country in Europe. The EPO system permits a single application to be granted for the whole of the EU, plus other non-EU countries, such as Switzerland and Turkey. A patent granted by the EPO or a European country office will expire no later than 21 years from the earliest patent application on which the patent is based. Pharmaceutical patents can also be granted a further period of exclusivity under the Supplementary Protection Certificate (SPC) system. SPCs are designed to compensate the owner of the patent for the time it took to receive marketing authorization by the European Health Authorities. An SPC may be granted to provide, in combination with the patent, up to 15 years of exclusivity from the date

of the first European marketing authorization. But the SPC cannot last longer than 5 years. The SPC duration can additionally be extended by a further 6 months if the product is the subject of an agreed pediatric investigation plan. The post-grant phase of patents, including the SPC system, is currently administered on a country-by-country basis under national laws which, while differing, are intended to, but do not always, have the same effect.

As in the US, in practice, it is not uncommon for the granting of an SPC to not fully compensate the owner of a patent for the time it took to receive marketing authorization by the European health authorities. Rather, since it can often take from 5 to 10 years to obtain a granted patent in Europe after the filing of the application, and since it can commonly take longer than this to obtain a marketing authorization for a pharmaceutical product in Europe, it is not uncommon that a pharmaceutical product, at the date of approval, will have a patent lifetime of 10 to 15 years, including all extensions available at that time.

Data and Market Exclusivity

In addition to patent exclusivity, the EU also provides a system of regulatory data exclusivity for authorized human medicines, which runs in parallel to any patent protection. The system for drugs being approved today is usually referred to as "8+2+1" because it provides: an initial period of 8 years of data exclusivity, during which a competitor cannot rely on the relevant data; a further period of 2 years of market exclusivity, during which the data can be used to support applications for marketing authorization, but the competitive product cannot be launched; and a possible 1 year extension of the market exclusivity period if, during the initial 8-year data exclusivity period, the sponsor registered a new therapeutic indication with "significant clinical benefit." This system applies both to national and centralized authorizations. This system has been in force since late 2005, therefore some medicines remain covered by the previous system in which EU member states provided either 6 or 10 years of data exclusivity.

The EU also has an "orphan drug" system for medicines similar to the US system. If a medicine is designated as an "orphan drug," then it benefits from 10 years of market exclusivity after it is authorized, during which time a similar medicine for the same indication will not receive marketing authorization.

Japan

In Japan, a patent can be issued for active pharmaceutical ingredients. Although methods of treatment, such as dosage and administration, are not patentable in Japan, pharmaceutical compositions for a specific dosage or administration method are patentable. Processes to make a pharmaceutical composition are also patentable. The patent term granted is generally 20 years from the filing date of the patent application on which the patent is based. It can be extended up to 5 years under the Japanese Patent Act to compensate for erosion against the patent term caused by the time needed to obtain marketing authorization from the MHLW. Typically, it takes approximately 7 to 8 years to obtain marketing authorization in Japan. A patent application on a pharmaceutical substance is usually filed shortly before or at the time when clinical testing begins. Regarding compound patents, it commonly takes approximately 4 to 5 years or more from the patent application filing date to the date that the patent is ultimately granted. As a result, it is not uncommon for the effective term of patent protection for an active pharmaceutical ingredient in Japan to be approximately 10 to 15 years, if duly extended.

The following are additional details regarding the patent expiration dates and exclusivity for certain key products of our Pharmaceuticals Division:

Oncology

- *Gleevec*/*Glivec.* We have patent protection on imatinib, the active ingredient in *Gleevec*/*Glivec*, until July 2015 in the US and until 2016 in the major European countries. The patent on the active ingredient expired in 2014 for the main indications in Japan. Additional patents were granted in

more than 40 countries, including the US, Japan, France, Germany, UK, Italy and Spain, claiming innovative features of *Gleevec*/*Glivec*, including the crystal form (expiry 2018), tablet formulation (expiry 2023) and process (expiry 2023). Patent protection on the crystal form of imatinib was challenged in the US by generics manufacturers, but no challenge has been made to the compound patent in the US. In March 2014, litigation in the US against one such generic manufacturer was settled, which will allow that generic manufacturer to enter the US market on February 1, 2016. *Gleevec*/*Glivec* currently faces generic competition in a number of countries including Brazil, Canada, China, India, Russia, Turkey and for a minor indication in Japan. Litigation is also ongoing in Canada, Portugal, UK, South Korea and Mexico.

- *Sandostatin.* Patent protection for octreotide acetate, the active ingredient in *Sandostatin*, has expired. Generic versions of *Sandostatin* SC are available in the US and elsewhere. A series of US patents protect *Sandostatin LAR*, the long acting version of *Sandostatin* which represents a majority of our *Sandostatin* US sales. Some of these US patents have already expired, and the last of these US patents is expected to expire in 2017. Patents protecting the *Sandostatin LAR* formulation in key markets outside the US have expired.
- *Afinitor* and *Afinitor Disperz*/*Votubia* and *Zortress*/*Certican.* Everolimus, the active ingredient in these products is also licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents. Patent protection on everolimus (including the compound patent) has been challenged in the US.
- *Exjade.* In the US and Canada, generic companies have challenged the compound patent for the active ingredient in *Exjade*. In the US, an automatic stay preventing the FDA from approving a generic version of *Exjade* expired in August 2014. Novartis settled one action against a generic company in the US in March 2014. Another action against a different generic manufacturer remains pending, with the automatic stay in this case expiring in November 2016. It is possible that the generic company may launch its generic version of *Exjade* after the automatic stay expires, or if we lose our patent litigation suit against it.
- *Femara.* Generic versions of *Femara* are available now in all major markets with the exception of Japan.
- *Jakavi.* Novartis licensed ruxolitinib from Incyte Corporation for development and commercialization outside the US.

Cardio-Metabolic

- *Galvus* and *Eucreas*. Patent protection for vildagliptin, the active ingredient of *Galvus*, and the patented active ingredient in *Eucreas*, is estimated to expire, with extensions, in 2022 in Europe and 2024 in Japan.

Immunology and Dermatology

- *Xolair.* Potential biosimilar competitors have initiated biosimilarity trials in China. No biosimilarity trials have been initiated in highly-regulated markets such as the US, Europe and Japan.
- *Myfortic.* In the US, four patent litigations have been settled and a generic version of *Myfortic* is currently available. Generic manufacturers are seeking approval for generic versions of *Myfortic* in some European countries.
- *Cosentyx.* Patent protection for the active ingredient in *Cosentyx* is expected to expire in 2028 in the US, 2030 in Europe and 2029 in Japan.

Retina

- *Lucentis.* Novartis licensed *Lucentis* from Genentech for development and commercialization outside the US.

Respiratory

- *Ultibro. Ultibro* is a product which combines indacaterol, the active ingredient in *Arcapta*/*Onbrez*, with glycopyrronium bromide, the active ingredient in *Seebri*. There is no compound patent protection on glycopyrronium, but there are patents and patent applications for the dry powder formulation technology that apply to both glycopyrronium and fixed-dose combination indacaterol/glycopyrronium products. In addition, there are patents and patent applications for the combination of indacaterol and glycopyrronium that are due to expire in 2025 worldwide (excluding extensions in some countries).
- *TOBI Podhaler.* There is no patent protection for the active ingredient, tobramycin. Patents covering the commercial product will expire from 2018 to 2022 in the US and Europe. Additional patent applications are also pending with respect to the commercial product in the US and Europe, potentially providing protection until 2025. In addition, in Europe, *TOBI Podhaler* is entitled to orphan drug status until 2023 for the current approved indication. Regulatory data protection in the US expires in 2016.

Neuroscience

- *Gilenya.* Patent protection for fingolimod, the active ingredient in *Gilenya* (licensed from Mitsubishi Tanabe Pharma Corporation), is expected to expire in 2019 in the US (including a 5-year patent term extension), and in 2018 in Europe and Japan (including a 5-year patent term extension). In Europe and Japan, we have regulatory exclusivity for the data generated for approval of *Gilenya* until 2021, which could possibly be extended by one year in Europe. A patent for the commercial formulation of *Gilenya* has been granted in most major markets (including Australia and Russia, where there is no compound patent). This patent will expire in 2024 in most countries, including Europe and Japan, and in 2026 in the US. Patent protection on fingolimod (including on the compound patent) has been challenged in the US.
- *Exelon.* Patent protection on rivastigmine, the active ingredient in *Exelon*, has expired and *Exelon* capsules are subject to generic competition in major markets, including the US and all of Europe. We hold additional patents with respect to *Exelon* Patch. Four generic manufacturers have filed applications to market generic versions of *Exelon* Patch in the US, and have challenged the patents covering the *Exelon* Patch. We have filed infringement lawsuits against all of these manufacturers. Generic versions of *Exelon* Patch are on the market in several European countries. We are taking steps to enforce patents and trademarks protecting *Exelon* Patch against the manufacturers and distributors of patches which have challenged our intellectual property rights.
- *Stalevo.* Patent litigation by Orion in the US against generic manufacturers settled and generic versions of *Stalevo* were launched in the US. Novartis was not a party to the US litigation. Generic manufacturers are seeking approval for generic versions of *Stalevo* in some European countries, and have launched in Germany.

Established Medicines

- *Cubicin.* RDP in the EU for *Cubicin* expires in 2016. However, generic competitors may only submit for EU approval after 2016, and it may take additional time to obtain marketing authorization.
- *Diovan*/*Co-Diovan*/*Diovan HCT.* In the EU, *Diovan* and *Co-Diovan* have faced generic competition since 2011, following expiration of the patent on valsartan. In the US, the valsartan patent expired in September 2012 and *Diovan HCT* has faced generic competition since then. Generic versions of *Diovan* monotherapy were launched in the US in May 2014. Patent protection expired in Japan in 2013 for *Diovan* and will expire in 2016 for *Co-Diovan* (including patent term extensions).

- *Exforge*/*Exforge HCT.* Patents covering *Exforge* (the combination of amlodipine besylate and valsartan) will expire in 2019 in the US and 2021 (including patent term extension) in Europe, and have been challenged in both the US and Europe. Since 2014, the product has faced generic competition in the US. We have regulatory data protection for *Exforge* in Europe until 2017, however, generic manufacturers may attempt to circumvent this regulatory exclusivity and seek to gain approval of a combination valsartan-amlodipine product in Europe before 2017. The patent covering *Exforge HCT* (the combination of amlodipine besylate, hydrochlorothiazide and valsartan) will expire in 2023 and has been challenged in the US and Europe.
- *Ritalin LA*/*Focalin XR.* Several generic manufacturers have filed applications to market generic versions of *Ritalin LA* and *Focalin XR* in the US. Litigation against several generic manufacturers was initiated in the US but has since been settled. Generic versions of certain strengths of *Ritalin LA* and *Focalin XR* are now available in the US.

Compounds in Development

We file patent applications on our Compounds in Development during the course of the development process. The length of the term of any patents on our Compounds in Development cannot be known with certainty until after a compound is approved for marketing by a health authority. This is so because patent applications for many of the compounds will be pending during the course of the development process, but not yet granted. In addition, while certain patents may be applied for early in the development process, such as for the compound itself, it is not uncommon for additional patent applications to be applied for throughout the development process, such as for formulations, or additional uses. Further, in certain countries, data exclusivity and other regulatory exclusivity periods may be available, and may impact the period during which we would have the exclusive right to sell a product. These exclusivity periods generally run from the date the products are approved, and so their expiration dates cannot be known with certainty until the product approval dates are known. Finally, in the US and other countries, pharmaceutical products are eligible for a patent term extension for patent periods lost during product development and regulatory review. The law recognizes that product development and review by the FDA and other health authorities can take an extended period, and permits an extension of the patent term for a period related to the time taken for the conduct of clinical trials and for the health authority's review. However, the length of this extension and the patents to which it applies cannot be known in advance, but can only be determined after the product is approved.

Subject to these uncertainties, we provide the following information regarding our Compounds in Phase III Clinical Development, if any, which have been submitted for registration to the FDA or the EMA:

- LBH589. Patent protection for panobinostat, a pan HDAC (histone deacetylase) inhibitor is expected to expire in 2026 in the US, Europe and Japan.
- LCZ696. Compound patent protection for the individual components, namely sacubitril and valsartan, has expired. Patents covering the combination of valsartan and sacubitril, as well as the LCZ696 salt complex, have been granted and expire in 2023 and 2026 (2027 in the US), respectively, without extensions. LCZ696 is entitled to post-approval regulatory exclusivity for five years in the US, 10 years in Europe and 8 years in Japan. We currently estimate that loss of exclusivity will occur in 2027 in the US, 2026 in the EU and 2030 in Japan.
- LDE225. Patent protection for sonidegib, a smoothened inhibitor of the Hedgehog pathway, is expected to expire in 2029 in the US and 2027 in Europe, excluding extensions.
- RLX030. Patent protection for the serelaxin molecule (human relaxin-2) has expired and the patents covering the formulation and process will expire prior to the product's projected launch date. A patent covering the method of using serelaxin to treat acute heart failure has been granted in the US and expires in 2029. This use patent is now under examination worldwide in markets that

permit use patents. Serelaxin is entitled to post-approval regulatory exclusivity for 12 years in the US, 11 years in Europe and eight years in Japan.

The loss of patent protection can have a significant adverse impact on our Pharmaceuticals Division. There is also a risk that some countries, particularly countries in the developing world, may seek to impose limitations on the availability of patent protection for pharmaceutical products, or on the extent to which such protections may be enforced. In addition, even though we may own or license patents protecting our products, and conduct pre-launch freedom-to-operate analyses, a third party may nevertheless claim that one of our products infringes an unlicensed third party patent. In addition, despite data exclusivity, a competitor could opt to incur the costs of conducting its own clinical trials and preparing its own regulatory application, and avoid data exclusivity altogether. As a result, there can be no assurance that our efforts to protect our intellectual property will be effective, or that we will be able to avoid substantial adverse effects from the loss of patent protection in the future.

ALCON

Our Alcon Division is a leader in the research, development, manufacturing and marketing of eye care products worldwide. As of December 31, 2014, the Alcon Division employed 23,900 full-time equivalent associates worldwide in 75 countries. In 2014, the Alcon Division had consolidated net sales of $10.8 billion representing 19% of total Group net sales.

Alcon is a global leader in eye care and offers an extensive breadth of products serving the full lifecycle of patient needs across eye diseases, vision conditions and refractive errors, and is our second largest Division based on sales. To meet the needs of ophthalmologists, surgeons, optometrists, opticians and physician specialists, Alcon operates with three franchises: Surgical, Ophthalmic Pharmaceuticals and Vision Care. Alcon products are available in more than 180 markets. Each franchise operates with specialized sales forces and marketing support.

Alcon's dedication to research and development is important to our growth plans. As part of our efforts, the Alcon Division works together with the Novartis Institutes for BioMedical Research (NIBR), our global pharmaceutical research organization. This collaboration allows our Alcon Division to leverage the resources of NIBR in an effort to discover and expand ophthalmic pharmaceutical research targets and to develop chemical and biologic compounds for the potential treatment of diseases of the eye, with a particular focus on diseases such as glaucoma and macular degeneration.

In July 2014, Alcon entered into an agreement with Google [x] to license its "smart lens" technology with the potential to address ocular conditions. In October 2014, Alcon acquired WaveTec Vision. The acquisition provided Alcon with the *ORA* System, the first commercialized intra-operative guidance system for cataract surgeons implanting intraocular lenses (IOLs). Alcon plans to integrate the *ORA* System into its existing *Cataract Refractive Suite* by Alcon.

In March 2012, Alcon gained exclusive rights from ThromboGenics to commercialize *Jetrea* (ocriplasmin) intravitreal injection outside the US. *Jetrea* is the first pharmacological treatment for vitreomacular traction, including macular hole, in Europe. *Jetrea* was approved for sale in the EU in 2013.

In July 2012, Alcon acquired Endure Medical Systems. The acquisition enabled Alcon to enter into the ophthalmic microscopy field through the addition of the *LuxOR* microscope, which has applications for both cataract, as well as vitreoretinal surgeries. *LuxOR* products were introduced globally in 2013.

To further improve surgical planning and refractive patient outcomes in cataract surgery, Alcon acquired the ophthalmic division of SensoMotoric Instruments in November 2012, providing Alcon with leading ocular surgical guidance technology. Alcon also agreed to acquire, from Jack Holladay, MD, and software developer Athanassios Kontos, the rights to certain surgical guidance and planning software used in cataract procedures.

Alcon Division Products

Surgical

Our Alcon Division's Surgical franchise is the market leader in global ophthalmic surgical product revenues, offering ophthalmic surgical equipment, instruments, disposable products and intraocular lenses for surgical procedures that address cataracts, vitreoretinal conditions, glaucoma and refractive errors.

Alcon's Surgical portfolio includes the *Cataract Refractive Suite* by Alcon, a suite of equipment to help plan and perform some of the most challenging steps of cataract surgery with automation and precision. It is comprised of the *Centurion* vision system phacoemulsification technology platform; the *LenSx* laser, a femtosecond laser for increased precision and reproducibility for the corneal incision, capsulorhexis and lens fragmentation steps of the procedure; the *Verion* image guided system, an ocular surgical planning, imaging and guidance technology; the *ORA System*, an intra-operative guidance system for IOL implantation during cataract surgery; and the *LuxOR LX3* surgical microscope for greater visualization during surgery. The portfolio also includes the *Infiniti* vision system to perform cataract surgeries, which is the phacoemulsification platform introduced prior to the *Centurion* vision system, the *Constellation* vision system for retinal operations, and the *WaveLight* refractive suite for refractive procedures and Lasik treatments. Alcon also offers the *AcrySof* family of intraocular lenses (IOLs) to treat cataracts, including the *AcrySof IQ*, *AcrySof IQ ReSTOR, AcrySof IQ Toric* and *AcrySof IQ ReSTOR Toric* IOLs. In addition, Alcon provides advanced viscoelastics, surgical solutions, surgical packs and other disposable products for cataract and vitreoretinal surgery.

Ophthalmic Pharmaceuticals

Our Alcon Division's Ophthalmic Pharmaceuticals franchise develops and markets a broad range of pharmaceuticals to treat chronic and acute conditions of the eye including glaucoma, elevated intraocular pressure (associated with glaucoma), eye infection and inflammation, eye allergies, dry eye and retinal diseases. Ophthalmic Pharmaceuticals also oversees the line of professionally driven over-the-counter brands that include artificial tears and ocular vitamins. Product highlights within the Ophthalmic Pharmaceuticals portfolio include *Ilevro* ophthalmic suspension for the treatment of pain and inflammation associated with cataract surgery; *Simbrinza* suspension to lower intraocular pressure as a fixed-dose combination; *Travatan Z, Izba* and *DuoTrav*, each ophthalmic solutions for the treatment of elevated intraocular pressure associated with open-angle glaucoma or ocular hypertension; *Vigamox* ophthalmic solution for bacterial conjunctivitis; *Pataday* ophthalmic solution for ocular itching associated with allergic conjunctivitis; *Nevanac* ophthalmic suspension for eye pain and inflammation following cataract surgery, and to reduce the risk of macular edema associated with cataract surgery in diabetic patients; the *Systane* family of over-the-counter products for dry eye relief; and *Jetrea* intravitreal injection for treating vitreomacular traction, including when associated with macular hole of diameter less than or equal to 400 microns.

Vision Care

Our Alcon Division's Vision Care franchise develops and markets contact lenses and lens care products. Alcon's broad portfolio of silicone hydrogel, daily disposables and color contact lenses includes our *Air Optix*, *Dailies* and *Freshlook* brands. Our *Dailies* product line includes *Dailies Total1* lenses, a first-of-its-kind water gradient contact lens. Our *Air Optix* product line now includes the new *Air Optix Colors* silicone hydrogel contact lenses. Our contact lens care solutions business includes the *Opti-Free* line of multi-purpose disinfecting solutions and drops, as well as the *Clear Care* and *AOSept Plus* hydrogen peroxide lens care solutions.

New Products

Alcon launched a number of significant products in 2014, and also received a number of key approvals, including:

- *27+* vitrectomy packs for use during micro-incision vitrectomy surgery were launched globally.
- *AcrySof ReSTOR 2.5D* intraocular lens for distance vision correction during cataract surgery approved in Japan.
- *AcrySof IQ ReSTOR Toric 3.0D* intraocular lens: multifocal lens with astigmatism correction during cataract surgery approved in Japan.
- *AOSept Plus*/*Clear Care Plus* with *HydraGlyde* lens care solution was approved and launched in the EU.
- *Air Optix Colors* contact lenses: silicone hydrogel, color cosmetic monthly contact lenses received approval and was launched in the US and EU.
- *Centurion* vision system: phacoemulsification surgical platform for cataract surgery was approved in Japan.
- *Dailies AquaComfort Plus* toric lenses: daily disposable contact lenses for improving refractive errors, such as astigmatism, was launched in the US and select EU countries.
- *Dailies AquaComfort Plus* multifocal lenses: daily disposable contact lenses for improving refractive errors, such as presbyopia, was launched in the US and select EU countries.
- *Dailies Total1* daily disposable, water gradient contact lenses launched in Australia, Hong Kong and Japan.
- *DuoTrav* (travoprost/timolol) solution was approved and launched in China for the treatment of elevated intraocular pressure associated with open-angle glaucoma or ocular hypertension.
- *Finesse* flex loop: new *Grieshaber* instrument was launched globally for use during vitreoretinal surgical procedures.
- *Izba* (travoprost 0.003%) solution received US and EU approvals for the treatment of elevated intraocular pressure associated with open-angle glaucoma or ocular hypertension, and was launched in Denmark, Sweden, Romania, Finland and Norway.
- *LenSx Laser* was approved in Japan for use during cataract surgery.
- *LuxOR LX3* microscope system was approved in the US and EU for use during surgical procedures.
- *Opti-Free Pro* rewetting drops and lubricant eye drops received approval and was launched in select EU markets.
- *Simbrinza* (brinzolamide, 1.0%/brimonidine tartrate 0.2%) suspension received EU approval for the treatment of elevated intraocular pressure associated with glaucoma, was launched in the UK, Denmark and the Netherlands.
- *Travatan* (40μg/mL travoprost) eye drops solution, receives EU approval for the decrease in elevated intraocular pressure in pediatric patients, aged two months to less than 18 years, with ocular hypertension or pediatric glaucoma
- *UltraVit 7500* vitrectomy probes was launched globally for the use during vitreoretinal surgical procedures.
- *Verion* surgical planning system was approved in Japan, and was launched in the US and EU for use during cataract surgery.

Key Marketed Products

The following tables set forth certain key marketed products in our Alcon Division. While we intend to sell our marketed products throughout the world, not all products and indications are currently available in every country.

Surgical

Cataract	*AcrySof* family of intraocular lenses includes but is not limited to: *AcrySof IQ ReSTOR, AcrySof IQ Toric* and *AcrySof IQ ReSTOR Toric* advanced technology intraocular lenses that correct cataracts and distance vision with presbyopia and/or astigmatism *Cataract Refractive Suite* by Alcon designed to streamline the cataract surgical procedure through surgical planning and execution *Centurion* vision system intelligent phacoemulsification technology platform with cataract removal capabilities *Infiniti* vision system with the *OZil* torsional hand piece for cataract procedures *LenSx* laser used for specific steps in the cataract surgical procedure *LuxOR* microscope used for ophthalmic surgical procedures *ORA* System intra-operative guidance system for intraocular lens implant during cataract surgery *Verion* imaged-guided system for use during cataract surgery
Vitreoretinal	*Constellation* vision system for vitreoretinal operations *Ultravit* vitrectomy probes *23+, 25+ and 27+* vitrectomy packs *Purepoint* laser system and probes *Finesse* flex loop *Grieshaber* surgical instruments *Edgeplus* blade trocar cannula system *Ispan* gas, *Perfluron, Silkon* oil: Retina stabilizing adjuncts
Refractive	*Allegretto Wave Eye-Q* excimer laser for LASIK vision correction *WaveLight FS200* laser for specific steps in LASIK surgical procedures *WaveLight EX500* laser for LASIK vision correction
Glaucoma	*Ex-press* glaucoma filtration device

In addition, Alcon provides advanced viscoelastics, surgical solutions, surgical packs and other disposable products for cataract and vitreoretinal surgery.

Ophthalmic Pharmaceuticals

Glaucoma	*Simbrinza* suspension to lower intraocular pressure without a beta blocker *Travatan* and *Travatan Z* ophthalmic solutions to lower intraocular pressure *Izba* solution to lower intraocular pressure *Azopt* ophthalmic suspension to lower intraocular pressure *DuoTrav* ophthalmic solution to lower intraocular pressure (outside US markets) *Azarga*/*Azorga* ophthalmic suspension to lower intraocular pressure (outside US markets) *Nyogel* eye gel for reduction of intraocular pressure

Anti-Infectives	*Vigamox* and *Moxeza* ophthalmic solution for treatment of bacterial conjunctivitis
Anti-Inflammation	*Ilevro* suspension to treat pain and inflammation following cataract surgery *Nevanac* ophthalmic suspension to treat pain and inflammation following cataract surgery, and to reduce the risk of macular edema associated with cataract surgery in diabetic patients *Durezol* emulsion to treat pain and inflammation associated with eye surgery, and to treat endogenous anterior uveitis *TobraDex* and *TobraDex ST* ophthalmic suspensions, combination anti-infective/anti- inflammatory products *Voltaren* ophthalmic solution to treat post-operative inflammation after cataract surgery, and for temporary relief of pain and photophobia after refractive surgery
Dry Eye	The *Systane* family of over-the-counter dry eye products: *Systane* lubricant eye drops *Systane Balance* lubricant eye drops *Systane Ultra* lubricant eye drops *Systane* gel drops *Systane* lid wipes Lubricants for eye dryness, discomfort or ocular fatigue: *GenTeal* lubricant eye drops *Tears Naturale* lubricant eye drops *Oculotect* eye drops (outside US markets)
Allergy	*Patanol* and *Pataday* ophthalmic solutions for ocular itching associated with allergic conjunctivitis *Patanase* nasal spray for seasonal nasal allergy symptoms *Zaditor* antihistamine eye drops for temporary relief of itchy eyes associated with eye allergies (over-the-counter in the US) *Zaditen* Ophtha an H1-antagonist to fight allergic conjunctivitis *Livostin* an H1-antagonist to fight allergic conjunctivitis (Canada only)
Ear Infections	*Ciprodex** otic suspension to treat middle and outer ear infections
Ocular Nutrition	*ICaps* eye vitamin dietary supplements provide essential dietary ingredients to support eye health *Vitalux* nutrient supplements help patients with age-related macular degeneration maintain their vision (outside US markets)
Retinal	*Jetrea* (ocriplasmin) intravitreal injection for the treatment of vitreomacular traction, including macular hole *Triesence* suspension for visualization during vitrectomy

* *Ciprodex* is a registered trademark of Bayer Intellectual Property GmbH.

Vision Care

Contact Lenses	*Air Optix* family of silicone hydrogel contact lenses (including *Air Optix Colors* lenses) *Dailies* family of daily disposable contact lenses (including *Dailies Total1* lenses) *FreshLook* family of color contact lenses
Contact Lens Care	*Opti-Free PureMoist* MPDS *Opti-Free RepleniSH* MPDS *Opti-Free Express* MPDS *Clear Care* cleaning and disinfecting solution (*AOSept Plus* outside of North America)

Selected Development Projects

Surgical

Project/Product	Mechanism of action	Potential indication	Planned submission date/Current Phase
AcrySof IQ ReSTOR 2.5D IOL	Multifocal aspheric intraocular lens	Cataractous lens replacement with or without presbyopia	Submitted US
AcrySof IQ ReSTOR Toric 2.5D IOL	Multifocal, aspheric and cylinder correcting intraocular lens	Cataractous lens replacement with or without presbyopia, and with astigmatism	2015 US/Advanced development Submitted Japan
AcrySof IQ ReSTOR Toric 3.0D IOL	Multifocal, aspheric and cylinder correcting intraocular lens	Cataractous lens replacement with or without presbyopia, and with astigmatism	Submitted US
AcrySof IQ ReSTOR Toric 3.0D diopter range expansion IOL	Multifocal, aspheric and cylinder correcting intraocular lens	Cataractous lens replacement with or without presbyopia, and with astigmatism	2016 US and Japan/ Advanced development

Ophthalmic Pharmaceuticals

Project/Product*	Mechanism of action	Potential indication	Route of Administration	Planned submission date/Current Phase
EXE844b (finafloxacin)	Anti-infective	Otitis media-tympanostomy tube surgery	Topical	2016 US/III
EXZ829 (olopatadine hydrochloride)	Antihistamine and mast cell stabilization	Allergic conjunctivitis	Topical	Submitted US
RTH258	Anti-VEGF single-chain antibody fragment	Wet age-related macular degeneration	Intravitreal injection	≥ 2017/III

* EXE044 was approved by the FDA in 2014 as *Xtoro* (finafloxacin otic suspension, 0.3%). However, we do not plan to commercialize this product.

Vision Care

Project/Product*	Mechanism of action	Potential indication	Planned submission date/Current Phase
AOSept Plus/Clear Care Plus with *HydraGlyde*	Disinfection and cleaning	Contact lens care	Submitted US 2016 Japan/ Advanced development

* Development of CLM041 was discontinued in 2014. LCE293 is now disclosed as *AOSept Plus/Clear Care Plus* with *HydraGlyde*.

Principal Markets

The principal markets for our Alcon Division include the US, Canada and Latin America, Japan and Europe. The following table sets forth the aggregate 2014 net sales of the Alcon Division by region:

Alcon Division	2014 Net Sales to third parties	
	$ millions	%
Europe	2,872	27
United States	4,349	40
Asia, Africa, Australasia	2,449	23
Canada and Latin America	1,157	10
Total	**10,827**	**100**

	$ millions	%
Established Markets*	8,049	74
Emerging Growth Markets*	2,778	26
Total	**10,827**	**100**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Sales of certain ophthalmic pharmaceutical products, including those for allergies, anti-inflammatory and dry eye, are subject to seasonal variation. Sales of the majority of our other products are not subject to material changes in seasonal demand.

Research and Development

In 2014, our Alcon Division expensed $0.9 billion (on a core basis $0.9 billion) in research and development, which amounted to 9% of the Division's net sales. The Alcon Division expensed $1.0 billion (on a core basis $0.9 billion) and $1.0 billion (on a core basis $1.0 billion) in research and development in 2013 and 2012, respectively.

Our Alcon Division associates in research and development work to address diseases and conditions that affect vision, such as cataracts, glaucoma, retina diseases, dry eye, infection, ocular allergies and refractive error. Our Alcon Division invests approximately $1 billion annually to drive research and new product development in eye care. Alcon's pipeline strategy is built around a proof-of-concept qualification process, which quickly identifies opportunities that have the best chance for technical success and advances those projects, while terminating others with a low probability of success.

In addition, the Novartis Institutes for BioMedical Research (NIBR) is the Novartis global pharmaceutical research organization that works to discover innovative medicines that treat disease and improve human health. See "—Pharmaceuticals—Research and Development." For Alcon's Ophthalmic Pharmaceuticals franchise, NIBR engages in research activities in an effort to discover and expand ophthalmic research targets, and to develop chemical and biologic compounds for the potential treatment of diseases of the eye, with a particular focus on diseases such as glaucoma and macular degeneration. The costs for these activities are allocated to Alcon.

Research and development activities for Alcon's Surgical franchise are focused on expanding intraocular lens capabilities to improve refractive outcomes and on developing instruments for cataract, vitreoretinal and corneal refractive surgeries. The focus for the Vision Care franchise is on the research and development of new lens materials, coatings and designs to improve patient comfort, and on lens care solutions that provide the safety, disinfecting and cleaning power needed to help maintain ocular health. As announced in 2014, Alcon is also collaborating with Google [x], and has licensed its smart lens technology for ocular medical uses, including the potential to monitor glucose levels in diabetic patients and provide an accommodative contact lens/intraocular lens for patients living with presbyopia. The Ophthalmic Pharmaceuticals franchise is focused on the development of products for the treatment of retinal diseases, glaucoma (intraocular pressure lowering) and ocular allergy.

Production

We manufacture our Alcon Division's pharmaceutical products at nine facilities in the United States, Belgium, France, Spain, Brazil, Mexico, Canada and Singapore. Our Alcon Division's surgical equipment and other surgical medical devices are manufactured at twelve facilities in the United States, Belgium, Switzerland, Ireland, Germany and Israel. Our Alcon Division's contact lens and certain lens care production facilities are in the US, Canada, Germany, Singapore, Malaysia and Indonesia.

The goal of our supply chain strategy is to efficiently produce and distribute high quality products. The manufacture of our products is heavily regulated by governmental health authorities around the world, including the FDA. In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials. For some products and raw materials, we may also rely on a single source of supply.

The manufacture of our products is complex and heavily regulated, which means that supply is never guaranteed. Like our competitors, our Alcon Division has faced manufacturing issues and has received Warning Letters relating to such manufacturing issues. In particular, in December 2012, Alcon received an FDA Warning Letter following an inspection at the *LenSx* laser manufacturing site in Aliso Viejo, California. Alcon responded in writing to the FDA, and in February 2013, FDA responded to Alcon acknowledging that the corrective actions described in Alcon's written response appear to address the items identified in the Warning Letter. The Warning Letter was lifted in May 2014 after all corrective actions were completed. The items noted in the Warning Letter did not affect the safety or effectiveness of the *LenSx* laser, or impact Alcon's ability to sell the product. If we or our third-party suppliers fail to comply fully with regulations then there could be a product recall or other shutdown or disruption of our production activities. We have implemented a global manufacturing strategy to maximize business continuity in case of such events or other unforeseen catastrophic events. However, there can be no guarantee that we will be able to successfully manage such issues when they arise.

Marketing and Sales

Our Alcon Division conducts sales and marketing activities around the world organized under five operating regions (US, Europe/Middle East/Africa, Latin America/Caribbean/Canada, Asia and Japan). The Alcon Division's global commercial capability is organized around sales and marketing organizations dedicated to the Surgical, Ophthalmic Pharmaceuticals and Vision Care franchises.

Most of our global Alcon marketing efforts are supported by advertising in trade publications and by marketing and sales representatives attending regional and national medical conferences. Marketing efforts are reinforced by targeted and timely promotional materials and direct mail to eye care practitioners in the office, hospital or surgery center setting. Technical service after the sale is provided and an integrated customer relationship management system is in place in many markets. Where applicable in our Ophthalmic Pharmaceuticals and Vision Care franchises, direct-to-consumer marketing campaigns are executed to promote selected products.

While our Alcon Division markets all of its products by calling on medical professionals, direct customers and distribution methods differ across business lines. Although physicians write prescriptions, distributors, wholesalers, hospitals, government agencies and large retailers are the main direct customers for Alcon ophthalmic pharmaceutical products. Alcon surgical products are sold directly to hospitals and ambulatory surgical centers, although Alcon sells through distributors in certain markets outside the US. In most countries, contact lenses are available only by prescription. Our contact lenses can be purchased from eye care professionals, optical chains and large retailers, subject to country regulation. Lens care products can be found in major drugstores, food, mass merchandising and optical retail chains globally, subject to country regulations. In addition, mail order and Internet sales of contact lenses are becoming increasingly important channels in major markets worldwide.

As a result of changes in healthcare economics, managed care organizations are now one of the largest groups of payors for healthcare services in the US. In an effort to control prescription drug costs, almost all managed care organizations use a formulary that lists specific drugs that can be prescribed and/or the amount of reimbursement for each drug. We have a dedicated managed care team that actively seeks to optimize formulary positions for our products.

Competition

The eye care industry is highly competitive and subject to rapid technological change and evolving industry requirements and standards. Our Alcon Division typically competes with different companies across its three respective franchises—Ophthalmic Pharmaceuticals, Surgical and Vision Care. Companies within this industry compete on technological leadership and innovation, quality and efficacy of their products, relationships with eye care professionals and healthcare providers, breadth and depth of product offering and pricing. The presence of these factors varies across our Alcon Division's product offerings, which provides a broad line of proprietary eye care products and competes in all major product categories in the eye care market, with the exception of eyeglasses. Our principal competitors also sometimes form strategic alliances and enter into co-marketing agreements in an effort to better compete with us.

Regulation

Our Ophthalmic Pharmaceuticals products are subject to the same regulatory procedures as are the products of our Pharmaceuticals Division. See "—Pharmaceuticals—Regulation."

Our Surgical and Vision Care products are regulated as medical devices in the US and the EU. These jurisdictions each have risk-based classification systems that determine the type of information that must be provided to the local regulators in order to obtain the right to market a product. In the US, safety and effectiveness information for Class II and III devices must be reviewed by the FDA. There are two review procedures: a Pre-Market Approval (PMA) and a Pre-Market Notification (510(k)) submission. Under a PMA, the manufacturer must submit to the FDA supporting evidence sufficient to prove the safety and effectiveness of the device. The FDA review of a PMA usually takes 180 days from the date of filing of the application. Under Pre-Market Notification (510(k)), the manufacturer submits notification to the FDA that it intends to commence marketing the product, with data that establishes the product as substantially equivalent to another product already on the market. The FDA usually determines whether the device is substantially equivalent within 90 days.

In the EU, the CE marking is required for all medical devices sold. By affixing the CE marking, the manufacturer certifies that a product is in compliance with provisions of the EU's Medical Device Directive. Most such products are subject to a self-certification process by the manufacturer, which requires the manufacturer to confirm that the product performs to appropriate standards. This allows the manufacturer to issue a Declaration of Conformity and to notify competent authorities in the EU that the manufacturer intends to market the product. In order to comply with European regulations, our Alcon Division maintains a full Quality Assurance system and is subject to routine auditing by a certified third party (a "notified body") to ensure that this quality system is in compliance with the requirements of the EU's Medical Device Directive as well as the requirements of the ISO quality systems' standard ISO 13485.

Intellectual Property

We attach great importance to patents, trademarks, copyrights and know-how in order to protect our investment in research and development, manufacturing and marketing. It is our policy to seek the broadest possible protection for significant product developments in all major markets. Among other things, patents may cover the products themselves, including the product's active substance and its formulation. Patents may also cover the processes for manufacturing a product, including processes for manufacturing intermediate substances used in the manufacture of the products. Patents may also cover particular uses of a product, such as its use to treat a particular disease, or its dosage regimen.

The protection offered by such patents extends for varying periods depending on the legal life of patents in the various countries. The protection afforded, which may also vary from country to country, depends upon the type of patent and its scope of coverage. We monitor our competitors and vigorously challenge infringements of our intellectual property. See generally "—Pharmaceuticals—Intellectual Property."

Worldwide, all of our major products are sold under trademarks that we consider in the aggregate to be important to our business as a whole. We consider trademark protection to be particularly important in the protection of our investment in the sales and marketing of our Surgical, Ophthalmic Pharmaceuticals and Vision Care franchises. The scope and duration of trademark protection varies widely throughout the world. In some countries, trademark protection continues only as long as the mark is used. Other countries require registration of trademarks and the payment of registration fees. Trademark registrations are generally for fixed, but renewable, terms.

We rely on copyright protection in various jurisdictions to protect the exclusivity of the code for the software used in our surgical equipment. The scope of copyright protection for computer software varies throughout the world, although it is generally for a fixed term which begins on the date of copyright registration.

SANDOZ

Our Sandoz Division is a leader in developing, manufacturing and marketing generic pharmaceutical products, follow-on biopharmaceutical products known as biosimilars, and drug substances that are not protected by valid and enforceable third-party patents. As of December 31, 2014, affiliates of the Sandoz Division employed 26,423 full-time equivalent associates worldwide, and sold products in more than 160 countries. In 2014, the Sandoz Division achieved consolidated net sales of $9.6 billion, representing 16% of the Group's total net sales.

Sandoz is organized globally in three franchises: Retail Generics, Anti-Infectives, and Biopharmaceuticals & Oncology Injectables. In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals to third parties. Retail Generics includes the specialty areas of Dermatology, Respiratory and Ophthalmics, as well as cardiovascular, metabolism, central nervous system, pain, gastrointestinal, and hormonal therapies.

In Anti-Infectives, Sandoz manufactures active pharmaceutical ingredients and intermediates—mainly antibiotics—for internal use by Retail Generics and for sale to third-party customers. In Biopharmaceuticals, Sandoz develops, manufactures and markets protein- or other biotechnology-based products (known as biosimilars or follow-on biologics) and provides biotechnology manufacturing services to other companies, and in Oncology Injectables, Sandoz develops, manufactures and markets cytotoxic products for the hospital market.

Sandoz has three strategic priorities: to differentiate Sandoz based on its extensive global reach and advanced technical expertise in the development, manufacturing and marketing of differentiated generics, including medicines that are difficult to develop and manufacture, and biosimilars, to be first-to-market as originators' substance patents expire or become unenforceable, and to be cost competitive by leveraging economies of scale in production and development. Sandoz differentiated products are comprised of biosimilars and generic injectables, ophthalmics, dermatologics, and respiratory, as well as difficult-to-make oral solids (such as tacrolimus).

According to IMS Health, Sandoz is the second-largest company in worldwide generic sales and is the global leader in biosimilars, with three marketed medicines accounting for over half of all biosimilars sales in the combined regions of North America, Europe, Japan and Australia. In addition, we have a pipeline of several biosimilar molecules under development and in registration, including biosimilar rituximab (sold by Roche under the brand names Rituxan®/MabThera®) and biosimilar etanercept (sold by Amgen and Pfizer under the brand name Enbrel®).

In 2014, Sandoz launched 28 new products in the US including authorized generic versions of our Pharmaceuticals Division products *Diovan* (valsartan), *Focalin XR* (dexmethylphenidate ER) and *TOBI* (tobramycin inhalation solution, USP); as well as cyclophosphamide injection, USP; calcipotriene and betamethasone dipropionate ointment (Taclonex®, Leo Pharma); adapalene gel (Differin®, Galderma Laboratories); lansoprazole capsules, amoxicillin capsules, USP, and clarithromycin tablets, USP (PREVPAC®, Takeda Pharmaceuticals); the injectable decitabine (Dacogen®, Eisai), and Kerydin™ (tavaborole) topical solution, 5% after obtaining exclusive rights from Anacor Pharmaceuticals to commercialize it in the US through Sandoz's branded dermatology business, PharmaDerm. Furthermore, Sandoz reached an agreement with Upsher-Smith to obtain exclusive US distribution rights for its branded potassium chloride product line, Klor-Con®.

Key product launches in various European countries include *AirFluSal Forspiro*, a respiratory product that offers the proven combination of salmeterol (a long-acting inhaled beta$_2$-agonist) and fluticasone propionate (an inhaled corticosteroid) for asthma and chronic obstructive pulmonary disease patients in an innovative inhalation device, *Vitaros* (alprostadil), an innovative topical therapy for erectile dysfunction, escitalopram (Cipralex®, Lundbeck), and mometasone (the first generic version of Nasonex®, Merck Sharp & Dohme), which was launched in additional European countries in 2014 following launches in several European countries in 2013.

In Biopharmaceuticals, Sandoz continued to strengthen its global leadership in biosimilars, and to drive its contract manufacturing base business. Sandoz biosimilars are sold in over 60 countries. In addition, all three Sandoz biosimilar products continue to occupy the number one biosimilar position in terms of market share in their respective markets. According to IMS data, Sandoz' recombinant growth hormone *Omnitrope* was the fastest growing hGH treatment globally by volume. *Omnitrope*, which is now marketed in over 40 countries, was also among Sandoz's top three products in terms of sales. In 2014, Sandoz continued to roll out *SurePal*, an innovative device that provides patients with a simple and secure way to inject *Omnitrope*.

Anemia medicine *Binocrit* continued to demonstrate strong growth in several European countries as a short-acting erythropoietin stimulating agent (ESA). It is the leading biosimilar in its category by volume across Europe (short-acting only). Sandoz G-CSF biosimilar, *Zarzio*, continued to strengthen its leading

position as the number one filgrastim product in Europe by volume, ahead of Amgen's Neupogen® and Chugai's Granocyte®.

Sandoz continued to make significant progress on its biosimilar pipeline in 2014 and now has six molecules in Phase III clinical trials or registration. In 2014, Sandoz completed Phase III trials for biosimilar pegfilgrastim (Neulasta®, Amgen) for global registration, and completed patient enrollment in its Phase III clinical trial for biosimilar entanercept (Enbrel®, Amgen).

In addition, in 2014, Sandoz made significant progress with respect to biosimilar filgrastim (Neupogen®, Amgen). Sandoz received marketing authorization for the product in Japan. In the US, Sandoz completed Phase III trials, and the FDA accepted Sandoz's BLA for filgrastim, which was filed under the biosimilar pathway of the BLA. Sandoz is the first company to announce it has filed for approval of a biologic under the biosimilars pathway created in the Biologics Price Competition and Innovation Act of 2009. Subsequently, in January 2015, the FDA Oncologic Drugs Advisory Committee recommended approval of Sandoz's filgrastim for use in all indications in the reference product's label.

In December 2013, Sandoz received Danish marketing authorization for *AirFluSal Forspiro*. This was Sandoz's first European approval for this product and followed the completion of EU decentralized procedures (DCP) for eight EU countries. Since then, *AirFluSal Forspiro* has received marketing authorizations in a total of 15 European countries, as well as South Korea and Mexico, and been launched in four European countries and South Korea. These approvals and launches of *AirFluSal Forspiro* are a key element of Sandoz's strategy to introduce differentiated generic medicines and innovative products.

In 2014, Sandoz continued to accelerate its efforts across Sub-Saharan Africa, supported by a strong product portfolio that comprises anti-infectives, tuberculosis treatments, maternal and child health products, and medicines to address non-communicable diseases. In 2014, Sandoz established branch offices in Cameroon, Kenya and Zambia.

New Products

Sandoz launched a number of important products in various countries in 2014, including:

- Valsartan (*Diovan)*
- Cyclophosphamide injection, USP
- *AirFluSal Forspiro*
- *Kerydin* (tavaborole) topical solution, 5%
- *Vitaros* (alprostadil)
- Dexmethylphenidate ER (*Focalin XR)*
- Tobramycin inhalation solution, USP (*TOBI*)
- Calcipotriene and betamethasone dipropionate ointment, (Taclonex®, Leo Pharma)
- Adapalene gel (Differin®, Galderma Laboratories)
- Lansoprazole capsules, amoxicillin capsules, USP, and clarithromycin tablets, USP (PREVPAC®, Takeda Pharmaceuticals)
- Decitabine (Dacogen®, Eisai)
- Escitalopram (Cipralex®, Lundbeck)
- Mometasone (Nasonex®, Merck Sharp & Dohme)

Key Marketed Products

The following tables describe key marketed products for Sandoz (availability varies by market):

Retail Generics

Product	Originator Drug	Description
Valsartan	*Diovan*	High blood pressure and heart failure
Amoxicillin/clavulanic acid	Augmentin®	Anti-infective
Enoxaparin sodium injection	Lovenox®	Anti-coagulant
Acetylcysteine	Fluimicil®	Respiratory system
Fentanyl	Duragesic®	Analgesic
Omeprazole	Prilosec®	Ulcer and heartburn treatment
Linex (lactobacillus)	n/a	Dietary supplement
Tacrolimus	Prograf®	Transplantation
Sumatriptan	Imitrex®, Imigran®	Migraine headaches
Atorvastatin	Lipitor®	Blood cholesterol reduction
Diclofenac	*Voltaren*	Analgesic

Anti-Infectives

Active Ingredients	Description
Oral and sterile penicillins	Anti-infectives
Oral and sterile cephalosporins	Anti-infectives
Clavulanic acid and mixtures with clavulanic acid	ß-lactam inhibitors
Classical and semisynthetic erythromycins	Anti-infectives

Intermediates	Description
Various cephalosporin intermediates	Anti-infectives
Erythromycin base	Anti-infectives
Various crude compounds produced by fermentation	Cyclosporine, ascomysine, rapamycine, mycophenolic acid, etc.

Biopharmaceuticals

Product	Originator Drug	Description
Omnitrope	Genotropin®	Recombinant human growth hormone
Binocrit and Epoetin alfa *Hexal*	Eprex®/Erypo®	Recombinant protein used for anemia
Zarzio and Filgrastim *Hexal*	Neupogen®	Recombinant protein used in oncology

Oncology Injectables

Product	Originator Drug	Description
Leuprorelin	Lupron®, Eligard®	Prostate cancer
Docetaxel	Taxotere®	Breast, ovarian and non-small cell lung cancer
Methotrexate	Folex®, Rheumatrex®	Arthritis; breast, lung, cervix and ovarian cancer, and others
Azacitidine	Vidaza®	Bone marrow cancer, leukemia
Paclitaxel	Taxol®	Breast, lung and ovarian cancer, Kaposi sarcoma
Gemcitabine	Gemzar®	Bladder, pancreas, lung, ovarian, and breast cancer
Etoposide	Etopophos®, Vepesid®	Lung, ovarian, and testicular cancer
Oxaliplatin	Eloxatin®	Colorectal and colon cancer
Irinotecan	Camptosar®	Colon and Rectal cancer
Doxorubicin	Doxil®, Adriamycin®	Leukemia, breast, bone, lung and brain cancer, many types of carcinoma and soft tissue sarcomas

Biosimilars in Phase III Development and Registration

The following table describes Sandoz's biosimilar projects that are in Phase III clinical trials and registration:

Project/product	Common name	Mechanism of action	Potential indication/ indications	Therapeutic areas	Route of administration	Current phase
EP2006	filgrastim	Granulocyte colony-stimulating factor	Chemotherapy-induced neutropenia, mobilization of peripheral blood progenitor cells and others (same as originator)	Oncology	Subcutaneous and intravenous	US Registration
GP2013	rituximab	Anti-CD20 antibody	Non-Hodgkin lymphoma, chronic lymphocytic leukemia, rheumatoid arthritis, granulomatosis with polyangiitis (also known as Wegener's granulomatosis), and microscopic polyangiitis and others (same as originator)	Oncology and Immunology	Intravenous	II and III
GP2015	etanercept	TNF-α inhibitor	Arthritidies (rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis), plaque psoriasis and others (same as originator)	Immunology	Subcutaneous	III
GP2017	adalimumab	TNF-α inhibitor	Arthritidies (rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis), plaque psoriasis and others (same as originator)	Immunology	Subcutaneous	III
HX575*	epoetin alfa	Erythropoiesis-stimulating agent	Chronic kidney disease, chemotherapy-induced anemia and others (same as originator)	Oncology and Nephrology	Subcutaneous and intravenous	III
HX575 s.c.**	epoetin alfa	Erythropoiesis-stimulating agent	Chronic kidney disease	Oncology and Nephrology	Subcutaneous	III
LA-EP2006	pegfilgrastim	Pegylated granulocyte colony-stimulating factor	Chemotherapy-induced neutropenia and others (same as originator)	Oncology	Subcutaneous	III

* Planned submission for US.

** Planned submission for EU (extension nephrology). Approved as *Binocrit* since 2007.

Principal Markets

The two largest generics markets in the world—the US and Europe—are the principal markets for Sandoz, although Sandoz sells products in more than 160 countries. The following table sets forth the aggregate 2014 net sales of Sandoz by region:

Sandoz	2014 Net Sales to third parties	
	$ millions	%
Europe	4,573	48
United States	3,215	34
Asia, Africa, Australasia	1,168	12
Canada and Latin America	606	6
Total	**9,562**	**100**

	$ millions	%
Established Markets*	7,035	74
Emerging Growth Markets*	2,527	26
Total	**9,562**	**100**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Many Sandoz products are used for chronic conditions that require patients to consume the product over long periods of time, from months to years. Sales of our anti-infective products are subject to seasonal variation. Sales of the vast majority of our other products are not subject to material changes in seasonal demand.

Production

The goal of our supply chain strategy is to produce and distribute high-quality products efficiently. The manufacture of our products is heavily regulated by governmental health authorities around the world, including the FDA. In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials.

We manufacture and package our Sandoz products at 45 manufacturing sites across 19 countries, supplying more than 160 countries globally. Among these, our most significant production facilities are located in Barleben and Rudolstadt, Germany; Kundl, Schaftenau and Unterach, Austria; Ljubljana, Slovenia; Stryków, Poland. We are implementing a global manufacturing strategy that focuses on building a high-quality manufacturing network that optimizes cost, service, technology and geography.

Active pharmaceutical ingredients are manufactured in our own facilities or purchased from third-party suppliers. We maintain state-of-the-art and cost-competitive processes within our own production network. Those processes include fermentation, chemical syntheses and precipitation processes, such as sterile processing. Many follow-on biologics are manufactured using recombinant DNA derived technology, by which a gene is introduced into a host cell, which then produces a human protein. This manufacturing process requires sophisticated technical expertise. We are constantly working to improve current, and to develop new, manufacturing processes.

Where possible, we maintain multiple supply sources so that the business is not dependent on a single or limited number of suppliers, and competitive material sourcing can be assured. However, our ability to

do so may at times be limited by regulatory or other requirements. We monitor market developments that could have an adverse effect on the supply of essential active pharmaceutical ingredients. All active pharmaceutical ingredients we purchase must comply with high quality standards.

We obtain agricultural, chemical and other raw materials from suppliers around the world. The raw materials we purchase are generally subject to market price fluctuations. We seek to avoid these fluctuations, where possible, through the use of long-term supply contracts. We also proactively monitor markets and developments that could have an adverse effect on the supply of essential materials. All raw materials we purchase must comply with our quality standards. For some products and raw materials, we may also rely on a single source of supply.

In July 2014, the FDA confirmed that it had decided to close out the Warning Letter issued in November 2011 against three of Sandoz's North American facilities in Broomfield, Colorado; Wilson, North Carolina; and Boucherville, Canada. The Warning Letter, which followed inspections at all three sites in the course of 2011, had raised concerns regarding these facilities' compliance with FDA cGMP regulations. The FDA observations in the Warning Letter related primarily to general documentation, validation and investigation practices. Novartis took steps in collaboration with the FDA to correct the observations in the Warning Letter with respect to all three sites.

In May 2013, we received a Warning Letter from the FDA concerning the oncology injectables manufacturing facility in Unterach, Austria. The letter contained two observations which followed an FDA inspection at the site in October 2012, and are related to historical visual inspection practices for products manufactured at the site. We are collaborating with the FDA to correct all concerns raised in the Warning Letter, and to ensure that our products are safe and effective and meet the highest quality standards. A follow-up inspection by the FDA in 2014 resulted in no observations.

Our Sandoz Division has experienced significant supply interruptions in the past, and there can be no assurance that supply will not be interrupted again in the future as a result of unforeseen circumstances. The manufacture of our products is complex and heavily regulated, making supply never an absolute certainty. If we or our third-party suppliers fail to comply fully with regulations or other unforeseen challenges occur, then there could be a product recall or other shutdown or disruption of our production activities. We have implemented a global manufacturing strategy to maximize business continuity in case of business interruptions or other unforeseen catastrophic events. However, there can be no guarantee that we will be able to successfully manage such issues and maintain continuous supply if such issues arise.

Marketing and Sales

Sandoz sells a broad portfolio of generic pharmaceutical products to wholesalers, pharmacies, hospitals and other healthcare outlets. Sandoz adapts its marketing and sales approach to local decision making processes, depending on the structure of the market in each country.

In response to rising healthcare costs, many governments and private medical care providers, such as health maintenance organizations, have instituted reimbursement schemes that favor the substitution of bioequivalent generic products for patented pharmaceutical products. In the US, statutes have been enacted by virtually all states that permit or require pharmacists to substitute a less expensive generic product for the brand-name version of a drug that has been prescribed to a patient. Generic use is growing in Europe, but penetration rates in many EU countries (as a percentage of volume) remain well below those in the US. Legislative or regulatory changes can have a significant impact on our business in a country. In Germany, for example, the generic market is in transition and healthcare reforms have increasingly shifted decision making from physicians to insurance funds.

Our Anti-Infectives franchise supplies generic antibiotics to a broad range of customers, as well as active pharmaceutical ingredients and intermediates to the pharmaceutical industry worldwide.

Our Biopharmaceuticals franchise operates in an emerging business environment. Regulatory pathways for approving biosimilar products are either relatively new or still in development, and policies have not yet been fully defined or implemented for the automatic substitution and reimbursement of biosimilars in many markets, including the US (see "—Regulation"). As a result, in many of these markets, including the US, our biosimilar products are marketed as branded competitors to the originator products.

Competition

The market for generic products is characterized by increasing demand for high-quality pharmaceuticals that can be marketed at lower costs due to comparatively minimal initial research and development investments. Increasing pressure on healthcare expenditures and numerous patent and data exclusivity period expirations have created a favorable market environment for the generics industry. This positive market trend, however, brings increased competition among the companies selling generic pharmaceutical products, leading to ongoing price pressure on generic pharmaceuticals.

In addition, research-based pharmaceutical companies have responded to increased competition from generic products by licensing their patented products to generic companies (so-called "authorized generics"). By doing so, research-based pharmaceutical companies participate directly in the generic conversion process. Consequently, generic companies that were not in a position to compete on a specific product may enter the generic market using the innovator's product. In the US, the authorized generic is not subject to the US Hatch-Waxman Act rules regarding exclusivity (see "—Regulation"). The company that launches an authorized generic typically launches its product at the same time as the generic exclusivity holder. Authorized generics serve as a business opportunity for Sandoz when the product of a research-based pharmaceutical company loses patent protection and Sandoz secures a license from the research-based pharmaceutical company to launch the authorized generic of that product. However, because they are not subject to the Hatch-Waxman Act rules on exclusivity, authorized generics also reduce the value of the exclusivity for the company that invested in creating the first generic medicine to compete with the originator product. Furthermore, certain research-based companies continually seek new ways to protect their market franchise and to decrease the impact of generic competition. For example, some research-based pharmaceutical companies have reacted to generic competition by decreasing the prices of their patented product, or engaging in other tactics to preserve the sales of their branded products, thus potentially limiting the profit that the generic companies can earn on the competing generic product.

Development and Registration

Before a generic pharmaceutical may be marketed, intensive technical and clinical development work must be performed to demonstrate, in bioavailability studies, the bioequivalency of the generic product to the reference product. Nevertheless, research and development costs associated with generic pharmaceuticals generally are much lower than those of the originator pharmaceuticals, as no pre-clinical studies or clinical trials on dose finding, safety and efficacy must be performed by the generic company. As a result, pharmaceutical products for which the patent and data exclusivity period has expired can be offered for sale at prices often much lower than those of products protected by patents and data exclusivity, which must recoup substantial basic research and development costs through higher prices over the life of the product's patent and data exclusivity period.

While generic pharmaceuticals are follow-on versions of chemically synthesized molecules, so-called "biosimilar" products contain a version of the active substance of an already approved original biological medicine. Due to the inherent variability of biologic products and their higher complexity, the development and the regulatory pathway of biosimilars differ significantly from that of generics.

Development of a biosimilar product is much more technically challenging than the development of a generic pharmaceutical. Unlike generic pharmaceuticals, development of biosimilars requires clinical

studies in patients. Biosimilars are engineered to match the reference product in quality, safety and efficacy. This is achieved by systematically defining the target of the reference product and then comparing the biosimilar to the reference product at various development stages to confirm biosimilarity and to establish that there are no clinically meaningful differences between the proposed biosimilar and the reference biologic. Because the purpose of a biosimilar clinical development program is to confirm biosimilarity and not establish efficacy and safety de novo, the clinical studies required are less than those required for an originator biologic, and no pre-clinical studies are required. Therefore, the cost of development for a biosimilar is usually less than that of an originator biologic.

The regulatory pathways for approval of biosimilar products are being developed and established in many countries of the world. A regulatory framework for the approval of biosimilars has been established in the EU, Japan, Canada and US, while the WHO issued guidance. Sandoz has successfully registered and launched the first biosimilar (or biosimilar type) product in Europe, the US, Canada, Japan, Taiwan, Australia and many countries in Latin American and Asia. Sandoz has three approved biosimilar products in more than 60 countries of the world, and is the first company to file a Biologics License Application (BLA) for marketing approval of a biosimilar in the US.

Currently, the affiliates of the Sandoz Division employ more than 2,700 Development and Registration staff who explore alternative routes for the manufacture of known compounds and develop innovative dosage forms of well-established medicines. These associates are based worldwide, including facilities in Holzkirchen and Rudolstadt, Germany; Kundl, Schaftenau and Unterach, Austria; Ljubljana and Mengeš, Slovenia; Boucherville, Canada; and East Hanover, New Jersey. In 2014, Sandoz expensed $0.8 billion (on a core basis $0.8 billion) in product development, which amounted to 8% of the division's net sales. Sandoz expensed $0.8 billion (on a core basis $0.8 billion) and $0.7 billion (on a core basis $0.7 billion, as a result, in part, of a decrease of a contingent consideration liability related to a business combination) in 2013 and 2012, respectively.

Regulation

The Hatch-Waxman Act in the US (and similar legislation in the EU and in other countries) eliminated the requirement that manufacturers of generic pharmaceuticals repeat the extensive clinical trials required for originator products, so long as the generic version could be shown in bioavailability studies to be of identical quality and purity, and to be therapeutically equivalent to the reference product.

In the US, the decision whether a generic pharmaceutical is bioequivalent to the original patented product is made by the FDA based on an Abbreviated New Drug Application (ANDA) filed by the generic product's manufacturer. The process typically takes nearly two years from the filing of the ANDA until FDA approval. However, delays can occur if issues arise regarding the interpretation of bioequivalence study data, labeling requirements for the generic product, or qualifying the supply of active ingredients. In addition, the Hatch-Waxman Act requires a generic manufacturer to certify in certain situations that the generic product does not infringe on any current applicable patents on the product held by the innovator, or to certify that such patents are invalid or the product is non-infringing. This certification often results in a patent infringement lawsuit being brought by the patent holder against the generic company. In the event of such a lawsuit, the Hatch-Waxman Act imposes an automatic 30 month delay in the approval of the generic product in order to allow the parties to resolve the intellectual property issues. For generic applicants who are the first to file their ANDA containing a certification claiming non-infringement or patent invalidity, the Hatch-Waxman Act provides those applicants with 180 days of marketing exclusivity to recoup the expense of challenging the innovator patents. However, generic applicants must launch their products within certain time frames or risk losing the marketing exclusivity that they had gained by being a first to file applicant.

In the EU, decisions on the granting of a marketing authorization are made either by the European Commission based on a positive recommendation by the EMA under the Centralized Procedure, or by a single Member State under the national or decentralized procedure. See "—Pharmaceuticals—

Regulation—European Union." Companies may submit Abridged Applications for approval of a generic medicinal product based upon its "essential similarity" to a medicinal product authorized and marketed in the EU following the expiration of the product's data exclusivity period. In such cases, the generic company is able to submit its Abridged Application based on the data submitted by the medicine's innovator, without the need to conduct extensive Phase III clinical trials of its own. For all products that received a marketing authorization in the EU after late 2005, the Abridged Application can be submitted throughout the EU. However, the data submitted by the innovator in support of its application for a marketing authorization for the reference product will be protected for ten years after the first grant of marketing authorization in all Member States, and can be extended for an additional year if a further innovative indication has been authorized for that product, based on pre-clinical and clinical trials filed by the innovator that show a significant clinical benefit in comparison to the existing therapies. Approval of biosimilars in Europe follows the same process. However, biosimilars usually have to be approved through the centralized procedure because they are manufactured using recombinant DNA technology.

The regulatory pathway for the approval of a biosimilar product in the US was established under the Biologics Price Competition and Innovation Act (BPCIA), signed into law in March 2010. Under the BPCIA, a biosimilar must be highly similar with no clinically meaningful differences compared to the reference product. Approval of a biosimilar in the US requires the submission of a BLA to the FDA, including an assessment of immunogenicity, and pharmacokinetics or pharmacodynamics. The BLA for a biosimilar can be submitted four years after the initial approval of the reference biologic, but can only be approved 12 years after the initial approval of the reference biologic. This pathway is still new and some aspects are untried, controversial and subject to litigation.

Intellectual Property

We take all reasonable steps to ensure that our generic products do not infringe valid intellectual property rights held by others. Nevertheless, originating companies commonly assert patent and other intellectual property rights in an effort to delay or prevent the launch of competing generic products. As a result, we can become involved in significant litigation regarding our generic products. If we are unsuccessful in defending these suits, we could be subject to injunctions preventing us from selling our generic products and to damages, which may be substantial.

Wherever possible, our generic products are protected by our own patents. Among other things, patents may cover the products themselves, including the product's formulation, or the processes for manufacturing a product. Patents also may cover particular uses of a product, such as its use to treat a particular disease or its dosage regimen. We seek the broadest possible protection for significant product developments in all major markets.

VACCINES

Our Vaccines Division researches, develops, manufactures, distributes and sells human vaccines worldwide. Its products include meningococcal, influenza, pediatric, adult and travel vaccines. On April 22, 2014, Novartis announced that it had reached definitive agreements with GSK on a set of inter-conditional transactions that, if completed, would impact our Vaccines Division. As part of these transactions, Novartis agreed to divest Vaccines to GSK, excluding its influenza vaccines business, for up to $7.1 billion, consisting of $5.25 billion upfront and up to $1.8 billion in milestones, plus royalties. These transactions are expected to close in the first half of 2015. In October 2014, Novartis announced that it had reached a definitive agreement with the Australian based company CSL Limited to acquire its influenza vaccines business for $275 million. The sale of the influenza vaccines business is expected to close in the second half of 2015. The proposed transactions with GSK and CSL are subject to closing conditions and regulatory approvals. Following these transactions, we will retain certain intellectual property rights and related other revenues from the Vaccines Division, which are now reported under Corporate activities. Prior to the January 9, 2014 completion of the divestment of the blood transfusion

diagnostics unit to Grifols S.A. for approximately $1.7 billion in cash, the division was known as Vaccines and Diagnostics. Diagnostics researched, developed, distributed and sold blood testing products. As of December 31, 2014, the Vaccines Division employed 6,491 full-time equivalent associates worldwide in more than 40 countries. In 2014, the Vaccines Division had consolidated net sales of $1.5 billion representing 3% of total Group net sales.

The Vaccines Division's products include meningococcal, influenza, pediatric, adult and travel vaccines, and our current product portfolio includes more than 16 marketed products. In addition, the division's development portfolio includes nine potential new products in Phase II and Phase III clinical trials and in various stages of registration.

Meningococcal disease causes approximately 50,000 deaths a year globally. The majority of infections are caused by five serogroups—A, B, C, W-135 and Y—and given that the distribution of these strains varies greatly over time and location, we are working to develop and deliver meningitis vaccines that offer broad coverage in order to help protect all age groups at risk.

Bexsero, the Novartis Meningococcal Group B Vaccine (rDNA, component, adsorbed), is a broad coverage vaccine available to help protect all age groups, including infants, against meningococcal disease caused by serogroup B (meningitis B). In 2013, *Bexsero* received EU approval. Since then, it has received regulatory approval in the US, Australia, Canada and Chile. To date, Bexsero has been approved in 37 countries. The US approval in January 2015 followed receipt of a Breakthrough Therapy designation from the FDA in April 2014, the commencement of a rolling submission of a BLA to the FDA for marketing approval of *Bexsero* to help protect individuals aged 10 through 25 years old from meningitis B, and the grant by FDA of priority review.

In 2013, *Bexsero* was launched privately in the UK, Germany, France and Ireland, with additional launches in Australia, Canada and several European countries since then. In 2014, *Bexsero* received recommendations for use in the National Immunization Programs (NIP) in the UK and Australia. *Bexsero* is currently under regulatory review in Argentina.

Menveo (MenACWY-CRM), a quadrivalent conjugate vaccine for the prevention of invasive meningococcal disease caused by the A, C, Y and W-135 serogroups of the bacteria, was approved in 2010 in the US for use in individuals 11-55 years old and in the EU for individuals 11 years and older. It is now approved in more than 60 countries. In 2011, *Menveo* gained approval for use in individuals 2-10 years of age in the US, and in 2012 gained approval in the EU for individuals 2 years and older. In 2013, the FDA expanded the approval of *Menveo* for the prevention of meningococcal disease in infants and toddlers from two months of age. With this expanded indication, pediatricians in the US can offer a single vaccine to help protect infants as young as two months of age, children and adolescents against four of the five most common serogroups that cause meningococcal disease.

Influenza vaccines are currently the division's largest franchise, and we are among the world's largest producers of influenza vaccine. Influenza vaccination is one of the most effective public health interventions, sparing millions of people from complications—including death—that can be caused by this infectious disease. In September 2013, Novartis began US shipments of *Flucelvax* [Influenza Virus Vaccine], the first cell-culture derived influenza vaccine approved in the US, to help protect adults 18 years of age and older against seasonal influenza. Cell-culture technology marks the most significant advancement in influenza vaccine manufacturing in the US in more than 40 years and is an alternative to traditional egg-based production. *Flucelvax* does not contain any preservatives, such as thimerosal, or antibiotics.

In June 2014, Novartis announced that the FDA had licensed its production facility in Holly Springs, North Carolina for the commercial production of seasonal and pandemic influenza vaccines developed using cell-culture technology. This is the first US facility of its kind and has the capacity to ramp up production in the event of an influenza pandemic. Following this site approval, *Flucelvax* was produced in the US and shipped for the first time for vaccination for the 2014-2015 season.

In July 2014, Novartis became the first manufacturer to begin annual shipment of its seasonal influenza vaccines to the US market for the 2014-2015 influenza season. We have shipped more than 70 million doses of our seasonal influenza vaccines, including *Flucelvax* and *Fluvirin*, globally for the 2014-2015 influenza season, and at least 43 million of these doses went to US customers.

Young children and older adults are among the most vulnerable to influenza. *Fluad*, our adjuvanted seasonal influenza vaccine, has been approved for more than a decade in Europe to enhance the immune response in adults ages 65 and older, helping to overcome their naturally occurring immune vulnerability. In addition, we submitted for approval of *Fluad* for adults 65 years of age and older in the United States, and received approval for *Fluad Pediatric* for use in children six months to two years of age in Canada in November 2014.

Novartis has been awarded various contracts by the US Department of Health and Human Services (HHS), including a (pre)pandemic preparedness contract and an Advanced Development and Manufacturing (ADM) Center contract. Under the terms of the ADM contract, our production facility in Holly Springs, North Carolina provides late-stage development and manufacturing expertise and capabilities to support HHS-driven projects, including development of new biodefense agents and rapid manufacturing response in the event of a public health emergency. The (pre)pandemic preparedness contract was used to support activities initiated by Novartis to develop a new vaccine against H7N9, a strain of avian influenza that emerged in China in early 2013. Following positive trial results for the vaccine, the US government ordered a large supply of the vaccine for stockpiling that was delivered at the end of 2013. This was in advance of a sharp increase in the number of H7N9 cases in China that were associated with a second wave of the outbreak. In addition, Novartis remains dedicated to working with the World Health Organization and other stakeholders to support global pandemic preparedness, including affordable and equitable access to pandemic vaccines for developing countries.

In 2012, Novartis informed the WHO and other public health partners that it would cease oral polio vaccine (OPV) manufacturing by 2013. Novartis produced and delivered oral polio vaccines to UNICEF, PAHO and individual countries in 2013, and supply commitments for 2013 were fulfilled as contracted. Novartis has been proud to have provided a significant proportion of the global supply of OPV for more than 20 years and is a longtime supporter of the Global Polio Eradication Initiative.

Vaccines Division Products

The summary and the tables that follow describe selected marketed products and potential products in development in our Vaccines Division. Subject to required regulatory approvals and, in certain instances, contractual limitations, we intend to sell our marketed products throughout the world. However, our Vaccines Division products are not currently available in every country. Regarding our products in development, these products and indications are in various stages of development throughout the world. For some products, the development process is ahead in the US; for others, development in one or more other countries or regions is ahead of that in the US. Due to the uncertainties associated with the development process, and due to regulatory restrictions in some countries, it may not be possible to obtain regulatory approval for any or all of the new products referred to in this Form 20-F. See ‘‘—Regulation’’ for further information on the approval process.

Selected Marketed Products

Product	Indication
Influenza Vaccines	
Agrippal	A surface antigen, inactivated, seasonal influenza vaccine for adults and children above six months of age
Fluad	A surface antigen, inactivated, seasonal influenza vaccine containing the proprietary *MF59* adjuvant for the elderly
Flucelvax (US)	Cell culture-based surface antigen, inactivated, seasonal influenza vaccine indicated for those aged 18 years and older
Fluvirin	A surface antigen, inactivated, seasonal influenza vaccine for adults and children four years of age and up
Optaflu (EU)	Cell culture-based, surface antigen, inactivated, influenza vaccine for adults 18 years of age and up
Meningococcal Vaccines	
Bexsero	Meningococcal Group B Vaccine [rDNA component adsorbed]
Menjugate	Meningococcal C vaccine for children 2 months of age and up
Menveo	Meningococcal A, C, W-135 and Y vaccine for children, adolescents and adults between 2 months and 55 years of age
Travel Vaccines	
Encepur Children/*Encepur* Adults	Tick-borne encephalitis vaccine for children 1-11 years of age and for adults 12+ years of age
Ixiaro[(1)]	Prophylactic vaccine against Japanese encephalitis virus
Rabipur/*Rabavert*	Vaccine for rabies, which can be used before or after exposure (typically animal bites) in all age groups
Pediatric Vaccines	
Quinvaxem[(2)]	Fully liquid pentavalent vaccine combining antigens for protection against five childhood diseases: diphtheria, tetanus, pertussis (whooping cough), hepatitis B and Haemophilus influenzae type b for children above 6 weeks of age

(1) In collaboration with Valneva.

(2) In collaboration with Crucell.

Selected Products in Development

Project/product	Common name	Vaccine Type	Planned submission dates/Current phase
Acellular Pertussis combination	Tdap vaccine	Pediatric	≥2015/I
aQIVpediatric	Seasonal influenza vaccine	Seasonal Influenza	≥2015/III
C. difficile[1]	*C. difficile* vaccine	Hospital Infections	≥2015/I
Cell culture QIV	Seasonal influenza vaccine	Seasonal Influenza	≥2015/III
Fluad US	Seasonal influenza vaccine	Seasonal Influenza	2014/Submission[2]
Flucelvax age 4+ US	Seasonal influenza vaccine	Seasonal Influenza	2014/Submission
Group B streptococcus	Group B *streptococcus* vaccine	Maternal	≥2015/II
H5N1 influenza cell culture vaccine[3]	Pandemic influenza vaccine	Pandemic	≥2015/II
H7N9[3]	H7N9 vaccine	Pandemic Influenza	≥2015/Not applicable
Human immunodeficiency virus (HIV)[4]	HIV vaccine	HIV	≥2015/I
MenABCWY	Meningococcal A, B, C, W and Y vaccine	Meningitis	≥2015/II
P. aeruginosa[1]	*P. aeruginosa* vaccine	Hospital Infections	≥2015/II
S. aureus	*S. aureus* vaccine	Hospital Infections	≥2015/I

(1) Collaboration with Valneva.

(2) Submission pending acceptance by FDA.

(3) Collaboration with United States Department of Health and Human Services.

(4) Collaboration with United States National Institutes of Health.

Principal Markets

The principal markets for our Vaccines Division include the US and Europe. The following table sets forth the aggregate 2014 net sales of the Vaccines Division by region:

Vaccines	2014 Net Sales to third parties	
	$ millions	%
Europe	549	36
United States	516	34
Asia, Africa, Australasia	248	16
Canada and Latin America	224	14
Total	**1,537**	**100**

	$ millions	%
Established Markets*	1,112	72
Emerging Growth Markets*	425	28
Total	**1,537**	**100**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Sales of certain vaccines, including influenza and tick borne encephalitis vaccines, are subject to seasonal variation. Sales of the majority of our other products are not subject to material changes in seasonal demand.

Research and Development

In 2014, the Vaccines Division expensed $0.5 billion (on a core basis $0.5 billion) in research and development, which amounted to 36% of the division's net sales. The Vaccines Division expensed $0.5 billion (on a core basis $0.5 billion) and $0.5 billion (on a core basis $0.4 billion) in research and development in 2013 and 2012 respectively.

While research and development costs for vaccines traditionally have not been as high as for pharmaceuticals, a robust clinical program including Phase I to Phase III must be performed by the manufacturer to obtain a license for commercialization. See "—Pharmaceuticals—Compounds in Development" and "—Pharmaceuticals—Research and Development." At each step, there is a substantial risk that we will not achieve our goals. In such an event, we may decide or be required to abandon a product or program in which we have made a substantial investment.

Production

The goal of our supply chain strategy is to produce and distribute high quality products efficiently. The manufacture of our products is heavily regulated by governmental health authorities around the world, including the FDA. In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials. For some products and raw materials, we may also rely on a single source of supply.

We manufacture our vaccines products at facilities in Europe, the US and Asia. Our principal production facilities are located in Liverpool, UK; Marburg, Germany; Siena and Rosia, Italy;

Ankleshwar, India; and Holly Springs, North Carolina. We continue to invest and upgrade our existing sites to ensure that previously initiated remediation efforts are completed and meet quality standards.

Each year new seasonal influenza vaccines need to be produced in order to help induce protection against the current circulating strains of the virus, which can change from year to year. Global surveillance of influenza viruses is conducted throughout the year by the World Health Organization (WHO) Influenza Surveillance Network, which provides information on currently circulating strains and identifies the appropriate strains to be included in next season's influenza vaccine. Each year, the EMA and the US Centers for Disease Control then confirm the vaccine composition for the coming season for the northern hemisphere, and the Australian Therapeutic Goods Administration confirms the composition for the southern hemisphere. There can be no guarantee that the division will succeed in producing and gaining approval of an updated influenza vaccine within the timeframes necessary to commercialize the vaccine for the applicable flu season.

The manufacture of our products is complex and heavily regulated, which means that supply is never guaranteed. Like our competitors, our Vaccines Division has faced significant manufacturing issues. If we or our third-party suppliers fail to comply fully with regulations then there could be a product recall or other shutdown or disruption of our production activities. We have implemented a global manufacturing strategy to maximize business continuity in case of such events or other unforeseen catastrophic events. However, there can be no guarantee that we will be able to successfully manage such issues when they arise.

Marketing and Sales

Our main Vaccines marketing and sales organizations are based in Switzerland, Germany, UK, Italy and the US. We also have operations in China, India, Latin America and most European countries. In the US, we market influenza, meningococcal, Japanese encephalitis and rabies vaccines through a network of wholesalers and distributors, as well as directly to key customers. Direct sales efforts are focused toward public health and distributor channels, as well as toward non-traditional channels, such as employers, chain drug headquarters and service providers.

Competition

The global market for products of the type sold by our Vaccines Division is highly competitive, and we compete against other major international corporations with substantial financial and other resources. Competition within the industry is intense and extends across a wide range of commercial activities, including pricing, product characteristics, customer service, sales and marketing, and research and development.

There is no guarantee that any product, even with patent protection, will remain successful if another company develops a new product offering significant improvements over existing products.

Regulation

Our vaccines products are subject to essentially the same regulatory procedures as are the products of our Pharmaceuticals Division. See "—Pharmaceuticals—Regulation." In the US, a company seeking approval of a vaccine submits a Biologics License Application (BLA) for the vaccine, rather than an NDA. Subsequently, the BLA follows substantially the same path for approval as does an NDA. In addition, license applications for seasonal influenza vaccines must be submitted annually.

Intellectual Property

We attach great importance to patents, trademarks, and know-how in order to protect our investment in research and development, manufacturing and marketing. It is our policy to seek the broadest possible protection for significant product developments in all major markets. Among other things, patents may cover the product itself, including its active substance and formulation. Patents may also cover the processes for manufacturing a product, including processes for manufacturing intermediate substances used in the manufacture of the products. Patents may also cover particular uses of a product, such as its use to prevent a particular disease, or its dosage regimen.

The protection offered by such patents extends for varying periods depending on the legal life of patents in the various countries. The protection afforded, which may also vary from country to country, depends upon the type of patent and its scope of coverage. We monitor our competitors and vigorously challenge infringements of our intellectual property.

CONSUMER HEALTH

Consumer Health is a leader in the research, development, manufacturing and marketing of a wide range of competitively differentiated products that restore, maintain or improve the health and well-being of consumers. The business of Consumer Health is conducted by a number of affiliated companies throughout the world. In 2014, Consumer Health consisted of the OTC (over-the-counter medicines) Division and the Animal Health Division.

On April 22, 2014, Novartis announced that it had reached definitive agreements with GSK and Lilly intended to transform our portfolio of businesses, including Consumer Health. As part of a set of inter-conditional transactions with GSK, Novartis agreed to create a joint venture with GSK in consumer healthcare by combining our OTC Division with the GSK consumer healthcare business, of which we would own 36.5% and have four of eleven seats on the board of the joint venture. We will also have customary minority rights and exit rights under a pre-defined, market-based pricing mechanism. The transactions with GSK are subject to closing conditions and regulatory approval, and are expected to close in the first half of 2015. We also agreed to divest our Animal Health Division to Lilly for approximately $5.4 billion, which was completed on January 1, 2015.

Consumer Health now consists only of the OTC Division.

Prior to the divestment of our Animal Health Division to Lilly, OTC and Animal Health each had its own research, development, manufacturing, distribution and selling capabilities. However, neither division was material enough to the Group to be separately disclosed as a segment. As of December 31, 2014, the affiliates of Consumer Health employed 9,020 full-time equivalent associates worldwide. Following the January 1, 2015 completion of the divestment of Animal Health, the affiliates of OTC employed 6,070 full-time equivalent associates worldwide. In 2014, the affiliates of Consumer Health achieved consolidated net sales of $4.3 billion, which represented 7% of the Group's total net sales.

OTC places considerable emphasis on the development of strong, consumer-oriented and trustworthy brands. To deliver accelerated sales growth and to achieve leadership positions in the fields in which we compete, OTC gives voice to the consumer and helps consumers to determine their needs and desires. The success of our OTC Division depends upon its ability to anticipate and meet the needs of consumers and health professionals worldwide.

Our OTC Division is a leader in offering products designed for self-care and prevention of common medical conditions and ailments to enhance people's overall health and well-being. The business of OTC is conducted by a number of affiliated companies in more than 50 countries. The OTC business focuses on a group of strategic global brands in leading product categories that include treatments for cough/cold/respiratory ailments (e.g., *Theraflu* and *Otrivin*) and pain relief (e.g., *Excedrin* and over-the-counter

Voltaren), as well as products for digestive health (e.g., *Benefiber* and *Prevacid24HR*), dermatology (e.g., *Lamisil* and *Fenistil*), and smoking cessation (*Nicotinell*).

Prior to its January 1, 2015 divestment to Lilly, Animal Health offered products and services to save, prolong and improve animal lives, focusing on both companion and farm animals (including cultivated fish).

Principal Markets

The principal markets for Consumer Health are the US and Europe. The following table sets forth the aggregate 2014 net sales of Consumer Health by region:

Consumer Health	2014 Net Sales to third parties	
	$ millions	%
Europe	2,059	48
United States	940	22
Asia, Africa, Australasia	834	19
Canada and Latin America	446	11
Total net sales	**4,279**	**100**

	$ millions	%
Established Markets*	2,798	65
Emerging Growth Markets*	1,481	35
Total net sales	**4,279**	**100**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Sales of our OTC Division are marked by a high degree of seasonality, with our cough, cold and respiratory brands significantly affected by the timing and severity of the annual cold and flu and allergy seasons. Sales of most of our other products are not subject to material changes in seasonal demand.

Production

The goal of our supply chain strategy is to produce and distribute high quality products efficiently. The manufacture of our products is heavily regulated by governmental health authorities around the world, including the FDA. In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials.

Products for our OTC Division are produced by the division's own plants, strategic third-party suppliers and other Group plants (which are predominantly owned and operated by the Pharmaceuticals Division). The primary OTC plants are located in Lincoln, Nebraska; Nyon, Switzerland; Humacao, Puerto Rico; and Jamshoro, Pakistan.

We generally obtain our raw materials, intermediates and active ingredients from suppliers around the world. The raw materials, intermediates and active ingredients we purchase are generally subject to market price fluctuations. We seek to avoid these fluctuations, where possible, through the use of long-term supply contracts. We also proactively monitor markets and developments that could have an adverse effect on the supply of essential materials. All raw materials we purchase must comply with our quality standards.

The OTC facility located at Lincoln, Nebraska manufactures products in solid dose and powder form for the *Excedrin* and *Theraflu* OTC brands as well as *Sentinel*, an Animal Health brand. From 2011 until 2013, we suspended operations and shipments from this facility in order to accelerate maintenance and other improvement activities at the site. During this process, production of certain products previously made at Lincoln was out-sourced, while other products were discontinued. We also recalled certain OTC Division products that were produced at this facility. During 2013, we resumed commercial production and shipping of *Sentinel* and *Excedrin* from the Lincoln facility. In July 2014, we resumed shipment of *Theraflu* to the US market from Lincoln. We have invested considerable resources to remediate issues at the Lincoln site, and during 2014, the facility substantially returned to routine operational procedures. However, as of the date of this Form 20-F it is not possible to determine when the plant will resume full production. As a result of the activities at Lincoln, Consumer Health experienced significant supply interruptions, and there can be no assurance that supply will not be interrupted again in the future as a result of unforeseen circumstances.

In January 2015, we announced that we will close our manufacturing site located at Humacao, Puerto Rico in phases by early 2019. The Humacao facility currently manufactures and packages *Gas-X* and *Ex-Lax* products, and also packages certain other products including *Prevacid*, *Habitrol*, and *Transderm Scop*.

The manufacture of our products is complex and heavily regulated, which means that supply is never guaranteed. If we or our third-party suppliers fail to comply fully with regulations, this could result in additional product recalls or other shutdowns or disruptions to our production activities. In addition, we may rely on a single source of supply for some of our products and raw materials. We have implemented a global manufacturing strategy to maximize business continuity in case of business interruptions or other unforeseen catastrophic events. However, there can be no guarantee that we will be able to successfully manage such issues when they arise.

Marketing and Sales

OTC aims to be a leading global participant in fulfilling the needs of patients and consumers for self-care. Strong leading brands and products, innovation led by a worldwide research and development organization, and in-house marketing and sales organizations are key strengths in pursuing this objective. We engage in general public relations activities, including media advertisements, brand websites and other direct advertisements of brands, to the extent permitted by law in each country. We distribute our products through various channels such as pharmacies, food, drug and mass retail outlets.

Competition

The global market for products of the type sold by Consumer Health is highly competitive, and we compete against other major international corporations with substantial financial and other resources. Competition within the industry is intense and extends across a wide range of commercial activities, including pricing, product characteristics, customer service, sales and marketing, and research and development. Our branded OTC products compete against "store brand" products that are made with the same active ingredients as ours, but which may be sold at a lower price. In addition, the recent trend toward consolidation in the industry may result in even more intense competition.

Research and Development

At OTC, our Research and Development organization pursues science-based, consumer benefit-driven innovation. The focus of our research and development activities is primarily in the areas of pain relief and cough/cold/respiratory treatments, as well as potential new therapeutic categories for the business. The development of line extensions to leverage the value of our brands is of high importance. These line extensions can take many forms, including more consumer-friendly packaging. OTC also works

closely with the Pharmaceuticals Division to evaluate appropriate products that can be switched from prescription to OTC status.

In 2014, Consumer Health expensed $0.3 billion (on a core basis $0.3 billion) in research and development, which amounted to 7% of the division's net sales. Consumer Health expensed $0.3 billion (on a core basis $0.3 billion) and $0.3 billion (on a core basis $0.3 billion) in research and development in 2013 and 2012 respectively.

Regulation

The regulatory process for bringing a new OTC product to market consists of preparing and filing a detailed dossier with the appropriate national or international registration authority and obtaining approval of the applicable health authority. See "—Pharmaceuticals—Regulation." OTC and health authorities worldwide continue to evaluate the safety of marketed products and propose changes based on this ongoing monitoring. Dossier submissions can also be made to update safety and/or labeling information throughout a product's lifecycle. In the US, in addition to the NDA process, which also is used to approve prescription pharmaceutical products, an OTC product may be sold if the FDA has determined that the product's active ingredient is generally recognized as safe and effective. FDA makes this determination through a regulatory process known as the OTC Drug Review. In the OTC Drug Review, the FDA has established, in a series of monographs, the conditions under which particular active ingredients may be recognized as safe and effective for OTC use. Pharmaceutical companies can market products containing these active ingredients without the necessity of filing an NDA and going through its formal approval process, so long as the company complies with the terms of the published monograph. Outside the US, countries have their own regulatory processes for approving or allowing the sale of pharmaceutical products, including prescription, OTC, and switching from prescription to OTC status. These processes vary from country to country, but essentially are all built on the principle of requiring an assessment of product efficacy, quality and safety in the context of the proposed population that will use the product, before any marketing activities can be undertaken. In addition, a process similar to the US monograph system exists in some countries, such as Canada and Japan.

Intellectual Property

Our OTC Division is strongly brand-oriented. As a result, we consider our trademarks to be of utmost value. Enforceable trademarks protect most of our brands in the majority of the markets where these brands are sold, and we vigorously protect these trademarks from infringement. Our most important trademarks are used in a number of countries. Local variations of these international trademarks are employed where legal or linguistic considerations require the use of an alternative. See also "—Alcon—Intellectual Property."

Generally, wherever possible our products are protected by patents. Among other things, patents may cover the products themselves, including the product's active substance and its formulation. Patents may also cover the processes for manufacturing a product, including processes for manufacturing intermediate substances used in the manufacture of the products. Patents may also cover particular uses of a product, such as its use to treat a particular disease, or its dosage regimen. It is our policy to seek the broadest possible protection for significant product developments in all major markets.

However, our OTC Division primarily sells products which are not currently covered by patents. Some of these products have never been patent-protected and others have lost protection due to patent expiry.

4.C Organizational Structure

See "Item 4. Information on the Company—4.A History and Development of Novartis," and "Item 4. Information on the Company—4.B Business Overview—Overview."

4.D Property, Plants and Equipment

Our principal executive offices are located in Basel, Switzerland. Our divisions operate through a number of affiliates having offices, research facilities and production sites throughout the world.

We generally own our facilities. However, some sites are leased under long-term leases. Some of our principal facilities are subject to mortgages and other security interests granted to secure indebtedness to certain financial institutions.

For a discussion of our manufacturing facilities, see "—Item 4.B Business Overview—Pharmaceuticals—Production," "—Alcon—Production," "—Sandoz—Production," "—Vaccines—Production," and "—Consumer Health—Production." The following table sets forth our major headquarters and most significant production and research and development facilities by division.

Location/Division	Size of Site (in square meters)	Major Activity
Major facilities:		
Pharmaceuticals		
East Hanover, NJ	400,000	Division US headquarters, research and development
Basel, Switzerland—St. Johann	200,000	Global Group headquarters, global division headquarters, research and development, production of drug substances and drug intermediates
Stein, Switzerland	130,300	Production of sterile vials, pre-filled syringes and ampoules, and of inhalation capsules, tablets and transdermals, and of active pharmaceutical ingredients
Cambridge, MA	65,000	Global NIBR headquarters, research and development
Grimsby, UK	64,000	Production of drug substances and drug intermediates
Ringaskiddy, Ireland	60,000	Production of drug substances and drug intermediates
Basel, Switzerland—Schweizerhalle	31,700	Production of drug substances and drug intermediates

Location/Division	Size of Site (in square meters)	Major Activity
Torre, Italy	30,690	Production of tablets and capsules
Singapore	29,000	Production of bulk tablets
Barbera, Spain	26,380	Production of tablets, capsules and inhalation products
Wehr, Germany	24,000	Production of tablets, creams and ointments
Shanghai, China	14,200	Research and development
Morris Plains, NJ	14,000	Production of personalized medicine
Alcon		
Fort Worth, Texas	252,800	Division headquarters, production, research and development for Ophthalmic Pharmaceuticals, Vision Care, Surgical
Johns Creek, Georgia	73,400	Production, research and development for Vision Care
Grosswallstadt, Germany	72,500	Production, research and development for Vision Care
Puurs, Belgium	55,000	Production for Ophthalmic Pharmaceuticals, Surgical
Houston, Texas	36,300	Production for Surgical
Huntington, West Virginia	24,600	Production for Surgical
Irvine, California	20,700	Production for Surgical
Sandoz		
Kundl and Schaftenau, Austria	480,000	Production of biotech products, anti-infectives, active drug substances, product development
Ljubljana, Slovenia	120,000	Production of broad range of finished solid and sterile dosage forms
Barleben, Germany	340,000	Production of broad range of finished dosage forms
Holzkirchen, Germany	72,300	Division headquarters, production of oral films, transdermal delivery systems, matrix patches, product development

Location/Division	Size of Site (in square meters)	Major Activity
Rudolstadt, Germany	37,000	Development and production of respiratory technologies and ophthalmics
Stryków, Poland	20,000	Production of broad range of bulk oral solid forms
Princeton, NJ	14,300	Division US headquarters
Vaccines		
Siena/Rosia, Italy	110,000	Production, research and development for vaccines and bacteriology
Marburg, Germany	80,000	Production, research and development for vaccines and adjuvant, quality control for all vaccines products
Hangzhou, China	50,800	Production of vaccines
Holly Springs, NC	50,000	Production, research and development of vaccines and adjuvant
Liverpool, UK	26,000	Production of vaccines
Ankleshwar, India	11,000	Production of vaccines
Cambridge, MA	9,000	Division headquarters, virology research
Consumer Health—OTC		
Lincoln, NE	48,000	Production of solids and powders, research and development
Jamshoro, Pakistan	24,000	Production of solids, semi-solids and liquids
Nyon, Switzerland	15,000	Production of semi-solids and liquids, research and development
Parsippany, NJ	14,000	Division headquarters
Humacao, Puerto Rico	13,000	Production of solids
Hyderabad, India	3,000	Research and development

In 2010, we announced a Group-wide review of our manufacturing footprint. In 2014, and continuing into 2015, we continued to optimize our manufacturing footprint, bringing the total number of production sites that have been or are in the process of being restructured, exited or divested to 24. This has and is expected to enable us to reduce excess capacity and to shift strategic products to technology competence centers. We have recorded charges related to restructuring and exits, impairment charges and inventory write-offs of $183 million in 2014, bringing the total charges to $698 million since the program began. As

part of this initiative we announced in 2014 the closing of the pharmaceuticals manufacturing site in Suffern, New York and the planned divestment of our pharmaceutical manufacturing site in Taboão da Serra, Brazil. Further, we announced the relocation of our *LenSx* laser manufacturing operations in Aliso Viejo, California to our Alcon Division's Surgical manufacturing site in Irvine, California.

Our St. Johann site in Basel, Switzerland, is our largest research and development site as well as the headquarters for the Group and for the Pharmaceuticals Division. A project was started in 2001, known as "Campus," with the aim of transforming the site into a center of knowledge, innovation and encounter with a primary emphasis on international corporate functions and research activities. At that time, changes needed to be made to the site, since it had originally been designed primarily for pharmaceuticals production, but Research and Development had come to account for a greater proportion of our activities there. The Campus project is progressing as planned. By the end of 2014, 15 new buildings had begun operations, seven of them laboratory buildings. Two further buildings are in the construction phase. These buildings are scheduled to open at the beginning of 2015. The current phase of the long term redevelopment of our St. Johann site is expected to be completed in 2015. In addition, the Novartis Board of Directors has approved planning for the next phase of the campus extension after 2015 in line with the overall plan for the site. A large laboratory building is planned for the northern end of the site. An architect has been commissioned to draw up plans for this building. In October 2014, the Basel "Grand Council" approved the second part of a high-rise building zone at the St. Johann site, which will allow us to plan a third high-rise building on the site. Through December 31, 2014, the total amount paid and committed to be paid on the Campus project is equivalent to $2.2 billion. Novartis expects to have spent more than the equivalent of $2.2 billion on Campus and the relocation of production facilities to other sites in the Basel region through 2015. We intend to fund these expenditures from internally generated resources.

In 2007, NIBR opened a start-up facility for our new R&D center in Shanghai, China (CNIBR). In 2008, we broke ground on Phase 1 of a new facility that was originally to be home to approximately 400 R&D scientists and approximately 400 other Pharmaceuticals Division personnel. In 2009, we announced that we would expand the scope of the site and invest $1 billion over the next five years to increase the size of our operations in Shanghai. Based on a re-evaluation of the site conducted in 2010, the current Phase 1 has been extended by two buildings to fulfill the requirements for the cross-divisional Shanghai campus to house 800 offices and 400 laboratory work places. As of December 31, 2014 the basement is completed, site infrastructure is tested and commissioning is in progress. In addition, the superstructures for the above ground buildings are completed, façade work is progressing, and for the majority of the buildings near completion, fit out work, testing and commissioning are underway. Through December 31, 2014, the total amount paid and committed to be paid on the CNIBR Project is $809 million.

In 2010, we announced that we would build new laboratory and office space for NIBR in Cambridge, Massachusetts on an area of land close to the existing NIBR research facilities on Massachusetts Avenue. In 2011 we finalized design plans for the new buildings, received necessary zoning changes from the City of Cambridge and began preparing the site for construction. Construction began on the site in April 2012, and as of the end of 2014, the façades were complete and work inside the buildings was underway. Through December 31, 2014, the total amount paid and committed to be paid on the NIBR Project is $743 million.

In 2010, we commenced a construction project on our Pharmaceuticals Division campus in East Hanover, New Jersey. It involved construction of three new office buildings, a parking garage, and upgrades to the site entrances. The purpose of the project was to consolidate US Pharmaceuticals Division personnel on one site to drive innovation, collaboration and productivity. The consolidation is also expected to achieve long-term cost savings resulting from the elimination of off-campus leases. The project was completed in March 2014. The facilities are operational and occupied and the off-campus leases have been terminated. The total amount paid and committed to be paid on this project was $557 million.

During 2012, the Pharmaceuticals Division commenced a series of projects in which we expect to invest over $350 million over five years. These projects are in the following three areas: implementation of a serialization product tracking program across its pharmaceutical operations network, providing a health, safety and environment / Good Manufacturing Practices upgrade for its milling and blending center at Stein, Switzerland, and for the upgrade of change control systems.

In the second quarter of 2012, Novartis announced the construction of a new state-of-the-art production facility to produce solid dosage form medicines for the Pharmaceuticals Division in Stein, Switzerland. We expect our investment in this facility to exceed $518 million. The new facility is planned to replace an older facility. Stein is planned to be a technological competence center for both sterile and solid dosage form drugs, while Novartis plans to expand the site's strategic role as a key platform for global launches of new pharmaceutical products. Through December 31, 2014, the total amount paid and committed to be paid on this project is $480 million.

In the fourth quarter of 2012, we announced the planned construction of a new state-of-the-art biotechnology production site in Singapore with an investment valued at over $500 million. The new facility will focus on drug substance manufacturing based on cell culture technology. Groundbreaking happened in February 2013 and construction is underway. The site is expected to be operational in 2016. It will be co-located with the pharmaceutical production site based in Tuas, Singapore. In the future, Singapore is expected to be a technological competence center for both biotechnology and pharmaceutical manufacturing at Novartis. Through December 31, 2014, the total amount paid and committed to be paid on this project is $342 million.

In December 2012, we acquired a 16,000 square meter FDA-approved manufacturing facility in Morris Plains, New Jersey, from Dendreon Corporation for $43 million. In particular, we purchased all fixed assets at the site, including all equipment, machinery, utilities, and cell therapy related plant infrastructure, while the land and building will continue to be leased from a third party. The facility, and the former Dendreon personnel whom we retained, will support both clinical and commercial production of potential new products and therapies that emerge from the Novartis-University of Pennsylvania collaboration announced in August 2012, including CTL019. The facility space and infrastructure could also accommodate future chimeric antigen receptor production activities, in addition to CTL019. Between January 2013 and the end of 2014, we have invested $15 million in the site, primarily on equipment for manufacturing and establishing new IT systems such as SAP. Through December 31, 2014, the total amount paid and committed to be paid on this project is $18 million.

In 2008, the Vaccines Division broke ground on a new rabies and tick-borne encephalitis manufacturing facility in Marburg, Germany, for which construction is now complete. In the first half of 2014, the EU and FDA approved the rabies antigen manufactured at the Marburg facility, meaning that *RabAvert* produced at the site can now be marketed in the EU and US. We are also now licensed to market *Encepur* manufactured at the site in the EU. Spending on this project was completed in 2014.

In 2009, the Vaccines Division opened the division's new cell culture-based influenza vaccine manufacturing site in Holly Springs, North Carolina. In June 2014, the FDA licensed the site for the production of cell-culture influenza vaccines. It is the first US facility of its kind and is approved for commercial production of seasonal and pre-pandemic influenza vaccines, with the capacity to significantly increase production in the event of an influenza pandemic. As of December 31, 2014, the total amount spent on the project was $597 million, net of grants reimbursed by the US government. This facility is part of the planned divestment of our influenza vaccines business to CSL. As described further in "Item 18. Financial Statements," upon announcement of this planned divestment we recorded a total impairment charge of $1.071 billion which included the full write off of the investment in the Holly Springs facility.

In 2014, the Alcon Division completed expansion of its Johns Creek, Georgia facility for contact lens manufacturing. The expansion added 6,500 square meters to the existing facility. With this expansion complete, the site began commercial production of *Dailies Total1* contact lenses in the fourth quarter of 2014. The total cost of this project was $268 million.

Environmental Matters

We integrate core values of environmental protection into our business strategy to add value to the business, manage risk and enhance our reputation.

We are subject to laws and regulations concerning the environment, safety matters, regulation of chemicals and product safety in the countries where we manufacture and sell our products or otherwise operate our business. These requirements include regulation of the handling, manufacture, transportation, use and disposal of materials, including the discharge of pollutants into the environment. In the normal course of our business, we are exposed to risks relating to possible releases of hazardous substances into the environment which could cause environmental or property damage or personal injuries, and which could require remediation of contaminated soil and groundwater. Under certain laws, we may be required to remediate contamination at third party sites, or at certain of our properties regardless of whether the contamination was caused by us, or by previous occupants of the property.

See also "Item 3. Key Information—Item 3.D Risk Factors—Environmental liabilities may adversely impact our results of operations" and "Item 18. Financial Statements—Note 20."

Item 4A. Unresolved Staff Comments

Not applicable.

Item 5. Operating and Financial Review and Prospects

5.A Operating Results

This operating and financial review should be read together with the Group's consolidated financial statements in this Annual Report, which have been prepared in accordance with IFRS as published by the IASB.

OVERVIEW

Novartis provides healthcare solutions that address the evolving needs of patients and societies worldwide. Our broad portfolio includes innovative medicines, eye care, cost-saving generic pharmaceuticals, preventive vaccines and over-the-counter products.

On April 22, 2014, Novartis announced that it had reached definitive agreements with GSK and Lilly on a set of transactions intended to transform our portfolio of businesses.

In inter-conditional transactions with GSK, Novartis agreed to: (1) acquire GSK oncology products and certain related assets, and was granted a right of first negotiation over the co-development or commercialization of GSK's current and future oncology R&D pipeline, excluding oncology vaccines; (2) create a joint venture with GSK in consumer healthcare by combining the Novartis OTC Division with the GSK consumer healthcare business, of which Novartis would own 36.5% and would have four of eleven seats on the joint venture's Board; and (3) divest the Vaccines Division (excluding the influenza vaccines business) to GSK. In addition, Novartis agreed to divest the Animal Health Division to Lilly. The divestment of our Animal Health Division to Lilly was completed on January 1, 2015.

On October 26, 2014, Novartis announced that it had reached a definitive agreement with CSL Limited (CSL) of Australia to divest its influenza vaccines business for $275 million.

The transactions with GSK and CSL are subject to closing conditions and regulatory approvals. The transactions with GSK are expected to close in the first half of 2015, and the transaction with CSL is expected to close in the second half of 2015.

The Group's wholly-owned businesses are organized into five global operating divisions, and we report our results in the following five segments. In addition, we separately report Corporate activities. Following the announcement of the transactions with GSK and Lilly, in order to comply with IFRS, Novartis has separated the Group's reported financial data for the current and prior year into "continuing" operations and "discontinuing" operations:

Continuing Operations:

- Pharmaceuticals: Innovative patent-protected prescription medicines
- Alcon: Surgical, ophthalmic pharmaceutical and vision care products
- Sandoz: Generic pharmaceuticals
- Corporate activities

Discontinuing Operations:

- Vaccines: Preventive human vaccines and the blood transfusion diagnostics unit, which was divested on January 9, 2014.
- Consumer Health: OTC (over-the-counter medicines) (following the January 1, 2015 completion of the divestment of our Animal Health Division to Lilly, the Consumer Health segment now consists only of the OTC Division)
- Corporate: certain transactional and other expenses related to the portfolio transformation

Novartis has leading positions globally in each of the three areas of our continuing operations. To maintain our competitive positioning across these growing segments of the healthcare industry, we place a strong focus on innovating to meet the evolving needs of patients around the world, growing our presence in new and emerging markets, and enhancing our productivity to invest for the future and increase returns to shareholders.

We separately report the financial results of our Corporate activities as part of our Continuing Operations. Income and expenses relating to Corporate include the costs of the Group headquarters and those of corporate coordination functions in major countries. In addition, Corporate includes other items of income and expense which are not attributable to specific segments such as certain expenses related to post-employment benefits, environmental remediation liabilities, charitable activities, donations and sponsorships.

Our divisions are supported by Novartis Business Services and the Novartis Institutes for BioMedical Research.

- Novartis Business Services (NBS) was launched in July 2014 with the transfer of over 7,000 associates, and organizational structures are being implemented to start operations in January 2015 as a shared services organization. NBS is designed to enhance profitability by harmonizing high-quality services at better price across the Group and Divisions. It covers approximately $6 billion in expenses, and synergies generated by the organization are expected to improve margin over time.
- The Novartis Institutes for BioMedical Research (NIBR) was created in 2003, and is headquartered in Cambridge, Massachusetts. More than 5,900 scientists and associates at NIBR conduct research into various disease areas at sites located in the US, Switzerland, UK, Italy, Singapore and China. For more information about NIBR, see "—Pharmaceuticals—Research and Development—Research program," below.

Novartis achieved net sales of $58.0 billion in 2014, while net income amounted to $10.7 billion. Research & Development expenditure in 2014 amounted to $9.9 billion ($9.6 billion excluding impairment and amortization charges). Of the Group's total net sales, $15.3 billion, or 26%, came from Emerging Growth Markets, and $42.6 billion, or 74%, came from Established Markets. Emerging Growth Markets

comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Headquartered in Basel, Switzerland, our Group companies employed 133,413 full-time equivalent associates as of December 31, 2014. Our products are available in approximately 180 countries around the world.

OPPORTUNITY AND RISK SUMMARY

Our financial results are affected, to varying degrees, by external factors. The aging of the global population and prevalence of behaviors that increase the risk of obesity and other chronic diseases is driving demand for treatments that Novartis provides, while the continued rise in healthcare spending causes customers to gravitate toward lower-cost treatment options which we produce at Sandoz and OTC. Advances in the fields of genomics and biotechnology and increasing use of connected medical devices and health information technology provide new opportunities for more tailored treatments to individual patients.

However, the loss of market exclusivity and the introduction of branded and generic competitors could significantly erode sales of our innovative products. Heightened regulatory requirements, the inherent complexity of our industry, and the risk of safety events increase our cost of doing business, and could lead to difficulties in bringing products to market and maintaining supply. The increasing trend of government investigations and litigations against healthcare companies, despite our best efforts to comply with local laws, could also have an adverse effect on our business and reputation.

For more detail on these trends and how they impact our results, see "—Factors Affecting Results of Operations" below.

RESULTS OF OPERATIONS

In evaluating the Group's performance, we consider not only the IFRS results, but also certain non-IFRS measures, including core results, constant currency results and adjusted 2013 results. These measures assist us in evaluating our ongoing performance from year to year and we believe this additional information is useful to investors in understanding our business.

The Group's core results exclude the amortization of intangible assets and impairment charges. They also exclude expenses relating to divestments, the integration of acquisitions and other income and expense items that are over a $25 million threshold that management deems exceptional. A reconciliation between IFRS results and core results, see "—Core Results"below.

We present information about our revenue and other key figures relating to operating profit and net income in constant currencies (cc). We calculate constant currency revenue and operating profit by applying the prior-year average exchange rates to current financial data expressed in local currencies in order to estimate an elimination of the impact of foreign exchange rate movements.

Adjusted 2013 results are discussed below. In addition, these and other non-IFRS measures are explained in more detail, see "—Non-IFRS Measures as defined by Novartis" below and are not intended to be substitutes for the equivalent measures of financial performance prepared in accordance with IFRS. These measures may differ from similarly titled non-IFRS measures of other companies.

2014 Compared to 2013

Group overview

The following table presents certain key figures for the Novartis Group, including net sales and net income and a comparison of those figures for 2014 against those for 2013. In addition, the table presents the same information adjusted to enable a comparison of our 2014 results against 2013 results excluding the results of our former blood transfusion diagnostics unit, which Novartis divested on January 9, 2014. No other adjustments are made to the 2013 figures. Novartis believes that this comparison will enhance investors' understanding of the performance of our ongoing business. For more information,

see "—Non-IFRS Measures as defined by Novartis—2013 Reconciliation of Group IFRS and core results excluding blood transfusion diagnostics unit".

Key figures

	Year ended Dec 31, 2014	Year ended Dec 31, 2013	Change in $	Change in constant currencies	excluding Diagnostics Year ended Dec 31, 2013	Change in $ % (excluding Diagnostics)[1]	Change in constant currencies % (excluding Diagnostics)[1]
	$ m	$ m	%	%	$ m		
Net sales to third parties	**57,996**	**57,920**	**0**	**2**	**57,355**	**1**	**3**
Other revenues	1,280	911	41	41	699	83	83
Cost of goods sold	(20,101)	(19,608)	(3)	(3)	(19,171)	(5)	(6)
Gross profit	**39,175**	**39,223**	**0**	**3**	**38,883**	**1**	**4**
Marketing & Sales	(14,189)	(14,549)	2	0	(14,504)	2	0
Research & Development	(9,943)	(9,852)	(1)	(1)	(9,823)	(1)	(1)
General & Administration	(3,047)	(3,060)	0	0	(3,039)	0	(1)
Other income	2,380	1,367	74	74	1,358	75	75
Other expense	(3,640)	(2,219)	(64)	(64)	(2,204)	(65)	(66)
Operating income	**10,736**	**10,910**	**(2)**	**5**	**10,671**	**1**	**7**
Return on net sales (%)	18.5	18.8			18.6		
Income from associated companies	1,920	600	220	220	600	220	220
Interest expense	(704)	(683)	(3)	(6)	(683)	(3)	(6)
Other financial income and expense	(31)	(92)	66	31	(92)	66	31
Income before taxes	**11,921**	**10,735**	**11**	**17**	**10,496**	**14**	**20**
Taxes	(1,641)	(1,443)	(14)	(20)	(1,352)	(21)	(28)
Net income	**10,280**	**9,292**	**11**	**17**	**9,144**	**12**	**19**
Attributable to:							
Shareholders of Novartis AG	*10,210*	*9,175*	*11*	*18*	*9,027*	*13*	*19*
Non-controlling interests	*70*	*117*	*(40)*	*(41)*	*117*	*(40)*	*(41)*
Basic earnings per share ($)	**4.21**	**3.76**	**12**	**18**	**3.70**	**14**	**20**
Free cash flow	**10,762**	**9,945**	**8**		**9,592**	**12**	

[1] Excluding the blood transfusion diagnostics unit divested on January 9, 2014.

Novartis delivered solid financial performance in 2014, driven by our continued success with growth products and expansion in emerging growth markets, which helped offset the effects of generic competition of approximately $2.4 billion. As a result, we achieved Group net sales of $58.0 billion, the same level as 2013 in reported terms, and up 2% in constant currencies (cc). Group operating income amounted to $10.7 billion (−2%, +5% cc). Operating income margin was 18.5% of net sales. Group net income rose 11% (+17% cc) to $10.3 billion. Earnings per share (EPS) rose 12% (+18% cc) to $4.21. Free cash flow in 2014 increased by 8% to $10.8 billion, mainly due to higher cash flows from operating activities.

To help illustrate performance on a more comparable basis, we also provide comparisons against 2013 data excluding the results of the blood transfusion diagnostics unit, which was divested on January 9, 2014. Excluding the divested unit, Group net sales were up 3% (cc), operating income advanced 7% (cc), net income rose 19% (cc) and EPS was up 20% (cc).

In addition, to help investors track the underlying health of our business, we present our core results, which exclude the exceptional impact of significant disposals and acquisitions, as well as other significant exceptional items. Our core results also exclude sales and income from the divested blood transfusion diagnostics unit. Our core operating income in 2014 increased 3% (+8% cc) to $14.6 billion. Core

operating income margin increased 0.5 percentage points to 25.2% of net sales, as our efforts to enhance productivity helped to offset 0.7 percentage points of negative impact from changing currency exchange rates. Core net income was $12.8 billion, up 3% (+8% cc), and core earnings per share rose 4% (+10% cc) to $5.23.

Growth

Across divisions, our portfolio of growth products and presence in emerging growth markets continued to fuel performance in 2014. Growth products comprise products launched in 2009 or later, or products with exclusivity until at least 2018 in key markets (EU, US, Japan) (except Sandoz, which includes only products launched in the last 24 months).

Sales of growth products increased 18% to $18.6 billion, or 32% of net sales. In the Pharmaceuticals Division, growth products accounted for 43% of net sales, up from 37% in 2013—demonstrating how we are rejuvenating our portfolio and mitigating the impact of patent expirations on key products.

Top-performing Pharmaceuticals products in 2014 included *Gilenya* ($2.5 billion, +30% cc), our oral therapy for multiple sclerosis; *Afinitor* ($1.6 billion, +22% cc), a treatment for several types of cancer including breast and kidney; and *Tasigna* ($1.5 billion, +24% cc), a treatment for chronic myeloid leukemia.

At Alcon, surgical equipment was a key growth driver, following the launch in late 2013 of the *Centurion* Vision System and continued growth of the *LenSx* femtosecond laser for cataract surgery. Disposable products for cataract and vitreoretinal surgery also showed strong growth.

In the Sandoz Division, biosimilars—which are follow-on versions of complex biologic drugs—made a strong contribution to growth, with sales rising 23% (cc) to $514 million globally.

In addition, efforts to expand our presence in emerging growth markets such as Asia, Africa and Latin America continued to show good results. Emerging growth markets comprise all markets except the US, Canada, Western Europe, Japan, Australia and New Zealand. Net sales in those markets rose 11% (cc) to $15.3 billion, led by China, up 15% (cc), and by Brazil, up 18% (cc).

Productivity

Novartis made solid progress in 2014 in generating synergies across divisions to improve productivity. Overall savings reached approximately $2.9 billion, exceeding our target. In 2014, we also created Novartis Business Services (NBS), a shared services organization designed to enhance profitability by harmonizing and simplifying the provision of services to the divisions. NBS is expected to play a key role in accelerating our productivity gains.

The most significant savings of $1.6 billion came from ongoing efforts in procurement to manage spending on goods and services across all our divisions. That represents 7% of the annual spending of $22 billion managed by the procurement organization.

An area where we made significant progress in 2014 was travel, where we reduced spending by about 23% across the company. We primarily achieved this by increasing the use of virtual meetings among Novartis colleagues, in lieu of travel. We aim to continue increasing the use of videoconferences and other technology for internal meetings to make these savings sustainable.

We also made strides in managing capital spending for equipment at manufacturing sites worldwide. In 2014, we began adopting standard technical requirements for machinery across our divisions. For instance, we now have uniform specifications for tablet presses, a common type of equipment previously purchased individually by each manufacturing site. This standardization enabled us to negotiate better prices from our supplier and will help reduce future costs related to such things as commissioning new equipment and maintenance.

Additionally, our multi-year plan begun in 2010 to optimize our global manufacturing network is on track. In 2014, we announced several further steps, including the closure of our pharmaceuticals manufacturing site in Suffern, New York, in the US and the planned sale of our pharmaceuticals

manufacturing site in Taboão da Serra, Brazil—bringing the total number of production sites that have been or are being restructured or divested to 24. These changes are helping us balance capacity, reducing it where no longer needed and adding new capacity for the products and technologies of the future.

We continued to find synergies to increase sales through our Customers First program, which delivered $1.6 billion in revenues in 2014, generating 2.8% of Group net sales. This program aims to serve our customers more effectively by ensuring they have access to a full range of Novartis products from all divisions.

Net Sales by Segment

The following table provides an overview of net sales to third parties by segment:

	Year ended Dec 31, 2014	Year ended Dec 31, 2013	Change in $	Change in constant currencies
	$ m	$ m	%	%
Pharmaceuticals	**31,791**	**32,214**	**(1)**	**1**
Alcon	**10,827**	**10,496**	**3**	**6**
Sandoz	**9,562**	**9,159**	**4**	**7**
Continuing operations	**52,180**	**51,869**	**1**	**3**
Discontinuing operations[1]	5,816	6,051	**(4)**	**(1)**
Net sales	**57,996**	**57,920**	**0**	**2**

(1) Discontinuing operations are explained in more detail, see "—Factors affecting comparability of year-on-year results of operations" and "Item 18. Financial Statements—Notes 3 and 30".

Continuing Operations

Pharmaceuticals

Pharmaceuticals delivered net sales of $31.8 billion (−1%, +1% in constant currencies, or cc) as strong sales of growth products countered the impact of greater generic competition for *Diovan* and other products, particularly in the US and Japan. Generic competition reduced sales by seven percentage points.

Growth products generated $13.7 billion of division net sales, growing 17% (cc) compared to last year. These products—which include *Gilenya*, *Afinitor*, *Tasigna*, *Galvus*, *Lucentis*, *Xolair*, *Jakavi* and our portfolio of products for the treatment of chronic obstructive pulmonary disease (COPD)—contributed 43% of division net sales, compared to 37% in 2013.

Sales in emerging growth markets increased 11% (cc) to $8.1 billion.

Oncology

Oncology sales rose 4% (+6% cc) to $11.7 billion, despite increased generic competition for *Zometa* ($264 million, −55% cc). By brand, growth was driven mainly by *Afinitor*, up 22% (cc) to $1.6 billion; *Tasigna*, up 24% (cc) to $1.5 billion; and *Jakavi*, up 72% (cc) to $279 million.

Primary Care

Sales in Primary Care, which includes mainly cardiovascular, metabolic and respiratory products amounted to $8.0 billion in 2014, down 12% (−10% cc). Excluding older, established medicines such as *Diovan* ($2.3 billion, −32% cc), sales rose 13% (+16%) to $2.8 billion. The recently launched COPD portfolio, for example, which includes *Onbrez Breezhaler/Arcapta Neohaler*, *Seebri Breezhaler,* and *Ultibro Breezhaler,* grew 93% (cc) to $484 million. Other key products include the *Galvus* Group, up 6% (cc) to $1.2 billion; and *Xolair*, up 30% (cc) to $777 million.

Specialty Care

Sales in Specialty Care, which includes our Neuroscience, Integrated Hospital Care and Ophthalmics products, amounted to $10.1 billion. *Gilenya*, our oral multiple sclerosis therapy, grew 30% (cc) to $2.5 billion, with strong volume growth through new patient initiations in the US and elsewhere. Sales of *Lucentis*, for ocular conditions, rose 5% (cc) to $2.4 billion, driven by increased use in new indications beyond wet age-related macular degeneration.

TOP 20 PHARMACEUTICALS DIVISION PRODUCT NET SALES—2014

Brands	Business franchise	Indication	Net sales in United States	Change in constant currencies	Net sales in Rest of world	Change in constant currencies	Total net sales	Change in $	Change in constant currencies
			$ m	%	$ m	%	$ m	%	%
Gleevec*/*Glivec	Oncology	Chronic myeloid leukemia	2,170	12	2,576	(5)	**4,746**	**1**	**2**
Gilenya	Neuroscience	Relapsing multiple sclerosis	1,190	16	1,287	45	**2,477**	**28**	**30**
Lucentis	Ophthalmics	Age-related macular degeneration			2,441	5	**2,441**	**2**	**5**
Diovan*/*Co—Diovan . . .	Primary Care	Hypertension	960	(43)	1,385	(22)	**2,345**	**(33)**	**(32)**
Sandostatin . .	Oncology	Acromegaly	751	6	899	6	**1,650**	**4**	**6**
Afinitor*/*Votubia . . .	Oncology	Breast cancer	805	16	770	29	**1,575**	**20**	**22**
Tasigna	Oncology	Chronic myeloid leukemia	540	26	989	23	**1,529**	**21**	**24**
Exforge	Primary Care	Hypertension	284	(20)	1,112	4	**1,396**	**(4)**	**(2)**
Galvus	Primary Care	Diabetes			1,224	6	**1,224**	**2**	**6**
***Exelon*/*Exelon* Patch**	Neuroscience	Alzheimer's disease	485	6	524	(6)	**1,009**	**(2)**	**(1)**
Exjade	Oncology	Iron chelator	307	16	619	1	**926**	**4**	**6**
***Xolair*[(1)]**	Primary Care	Asthma			777	30	**777**	**27**	**30**
Neoral*/*Sandimmun	Integrated Hospital Care	Transplantation	55	(2)	629	(6)	**684**	**(9)**	**(6)**
***Voltaren* (excl. other divisions)** .	Established medicines	Inflammation/pain			632	(3)	**632**	**(6)**	**(3)**
Myfortic	Integrated Hospital Care	Transplantation	149	(45)	394	14	**543**	**(15)**	**(11)**
Ritalin*/*Focalin	Established medicines	Attention deficit/ hyperactivity disorder	327	(25)	165	8	**492**	**(17)**	**(16)**
Femara	Oncology	Breast cancer	27	42	353	0	**380**	**(1)**	**2**
Comtan*/*Stalevo . . .	Neuroscience	Parkinson's disease	19	(42)	352	(1)	**371**	**(7)**	**(4)**
Tegretol	Established medicines	Epilepsy	82	19	264	1	**346**	**1**	**4**
Zortress*/*Certican . .	Integrated Hospital Care	Transplantation	60	88	267	28	**327**	**31**	**36**
Top 20 products total			**8,211**	**(3)**	**17,659**	**4**	**25,870**	**0**	**2**
Rest of portfolio . .			1,561	(13)	4,360	0	**5,921**	**(6)**	**(4)**
Total Division sales			**9,772**	**(5)**	**22,019**	**3**	**31,791**	**(1)**	**1**

(1) Net sales reflect *Xolair* sales for all indications (i.e. *Xolair* SAA and *Xolair* CSU, which are managed by the Integrated Hospital Care franchise).

Gleevec/*Glivec* ($4.7 billion, +2% cc) sales grew slightly in 2014. *Gleevec*/*Glivec* is a treatment for adult patients with metastatic and/or unresectable KIT+ gastrointestinal stromal tumors (GIST), as an adjuvant treatment for certain adult patients following resection of KIT+ GIST, and as a targeted therapy for Philadelphia chromosome-positive chronic myeloid leukemia (Ph+ CML). Sales were driven mainly by the US, and more than compensated for the loss of patent exclusivity in some markets. In the US, Novartis Pharmaceuticals Corporation has settled its litigation with a subsidiary of Sun Pharmaceutical Industries Ltd. relating to Novartis patents covering the use of certain polymorphic forms of *Gleevec*/*Glivec*, which expire in 2019 (including pediatric exclusivity). The basic compound patent for *Gleevec*/*Glivec* expires in the US on July 4, 2015. As a result of the settlement, Novartis will permit Sun's subsidiary to market a generic version of *Gleevec*/*Glivec* in the US beginning on February 1, 2016.

Gilenya ($2.5 billion, +30% cc), the first once-daily oral therapy to treat relapsing forms of multiple sclerosis (MS), continued to outgrow the market, achieving double-digit growth in 2014 in recognition of strong trends towards oral treatments with higher efficacy. Growth was also fueled by an increasing acceptance of the role of high-efficacy treatments when used earlier in the course of the disease. *Gilenya* continues to see volume growth through new patient initiations in both the US and non-US markets. In the US, *Gilenya* is indicated for relapsing forms of MS. In the EU, *Gilenya* is indicated for adult patients with high disease activity despite treatment with at least one disease modifying agent, or rapidly evolving severe relapsing remitting MS. *Gilenya* is currently approved in over 80 countries around the world. *Gilenya* is licensed from Mitsubishi Tanabe Pharma.

Lucentis ($2.4 billion, +5% cc) saw volume growth driven by the uptake in non-Age-Related macular degeneration (AMD) indications (such as visual impairment due to diabetic macular edema; macular edema secondary to central and branch retinal vein occlusion; and choroidal neovascularization secondary to pathologic myopia). In addition, the *Lucentis* pre-filled syringe was successfully launched in all key European countries, as well as Japan and Australia. Non-AMD indications contributed 41% of *Lucentis* sales in 2014, compared to 27% for 2013, and became a blockbuster in Q4. Emerging growth markets contributed 18% of *Lucentis* sales versus 16% last year. Emerging growth markets comprise all markets except the US, Canada, Western Europe, Japan, Australia and New Zealand. At the same time, *Lucentis* sales in the wet AMD indication, impacted by competition, are stabilizing in some markets. *Lucentis* is the only anti-VEGF therapy licensed in most countries for the treatment of the following ocular indications: wet AMD, visual impairment due to diabetic macular edema, visual impairment due to macular edema secondary to retinal vein occlusion and secondary to branch retinal vein occlusion, and visual impairment due to choroidal neovascularization secondary to pathologic myopia (mCNV). *Lucentis* is approved in more than 100 countries to treat patients with the first four conditions, and in more than 70 countries for mCNV. Genentech/Roche holds the rights to *Lucentis* in the US.

Diovan Group ($2.3 billion, −32% cc), consisting of *Diovan* monotherapy and the combination product *Co-Diovan*/*Diovan* HCT, saw a continued sales decline worldwide due to generic competition in most markets, including the US (following July 7, 2014 *Diovan* monotherapy generic entry), many EU countries and Japan (generic entry in June 2014), compounded in Japan by the impact of issues related to investigator initiated trials. Sales continued to grow in Emerging Growth Markets, including China and selected countries in Latin America, Asia Pacific and Africa.

Sandostatin ($1.7 billion, +6% cc) continued to benefit from the increasing use of *Sandostatin LAR* (long acting release) in key markets. *Sandostatin* is a somatostatin analogue used to treat patients with acromegaly as well as neuroendocrine tumors (NET). In NET, it is used for both the treatment of patients with symptoms of carcinoid syndrome and those with advanced NET of the midgut or unknown primary tumor location (currently approved in 47 countries). An enhanced presentation of *Sandostatin LAR*, which includes an improved diluent, safety needle and vial adapter, has been approved in 58 countries, with additional filings underway.

Afinitor/*Votubia* ($1.6 billion, +22% cc) performance was driven by strong growth in the US, Japan and other markets. *Afinitor* is an oral inhibitor of the mTOR pathway approved for the treatment of

patients with HR+/HER2− advanced breast cancer after failure with a non-steroidal aromatase inhibitor, for advanced renal cell carcinoma following vascular endothelial growth factor-targeted therapy and for the treatment of advanced pancreatic neuroendocrine tumors. *Afinitor* is also approved for subependymal giant cell astrocytoma (SEGA) and renal angiomyolipoma associated with tuberous sclerosis complex (TSC). Everolimus, the active ingredient in *Afinitor*/*Votubia*, is also available in more than 60 countries for the treatment of renal angiomyolipomas and/or SEGA associated with TSC, including as a dispersible tablet formulation in the US and EU for SEGA. Everolimus, the active ingredient in *Afinitor*/*Votubia*, is available under the trade names *Zortress*/*Certican* for use in other non-oncology indications and is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Tasigna ($1.5 billion, +24% cc) performance was driven by strong growth in the US and other markets. *Tasigna* is a more effective, targeted therapy than *Gleevec*/*Glivec* for adult patients newly diagnosed with Ph+ CML in the chronic phase or for adult patients in the chronic or accelerated phase who are resistant or intolerant to at least one prior therapy including *Gleevec*/*Glivec*. It is currently approved as a first-line therapy for newly diagnosed patients with Ph+ CML in the chronic phase in more than 85 countries globally, including the US, EU, Japan and Switzerland, with additional submissions pending worldwide. *Tasigna* (nilotinib) is also approved in more than 110 countries as a second-line treatment for patients with Ph+ CML in chronic and/or accelerated phase who are resistant or intolerant to existing treatment, such as *Gleevec*/*Glivec*.

Exforge Group ($1.4 billion, −2% cc), includes two medicines approved for the treatment of hypertension: *Exforge*, a single-pill combination of the angiotensin receptor blocker (ARB) valsartan and the calcium channel blocker amlodipine besylate; and *Exforge* HCT, a single pill combining an ARB (valsartan), calcium channel blocker (amlodipine) and a diuretic (hydrochlorothiazide). *Exforge* lost exclusivity in October 2014 and *Exforge* HCT in November 2014 in the US. Outside the US, *Exforge* continues to grow, with double-digit growth in China and a number of emerging growth markets. Emerging growth markets comprise all markets except the US, Canada, Western Europe, Japan, Australia and New Zealand. *Exforge* is now available in more than 100 countries. *Exforge* HCT is available in over 60 countries.

Galvus Group ($1.2 billion, +6% cc), which includes *Galvus*, an oral treatment for type 2 diabetes, and *Eucreas*, a single-pill combination of vildagliptin (the active ingredient in *Galvus*) and metformin, continued to grow in 2014 despite the distribution stop in the German market on July 1, 2014. Sales for the first six months of 2014 in Germany were $57 million. *Galvus* delivered a solid performance with strong growth coming from emerging markets. The focus for *Galvus* remains on patients whose diabetes remains uncontrolled on metformin, as well as on an expansion of usage in new patient segments based on new indications. *Galvus* Group is currently approved in more than 120 countries.

Exelon/*Exelon* Patch ($1.0 billion, −1% cc) sales declined slightly, due to generic competition for *Exelon* Patch in the EU offsetting a solid performance for *Exelon* Patch in the US. *Exelon* Patch is approved for the treatment of mild-to-moderate Alzheimer's disease dementia (AD) in more than 90 countries, including more than 20 countries where it is also approved for Parkinson's disease dementia. *Exelon* Patch is also indicated for the treatment of patients with severe AD in 11 countries, including the US. In Europe, the high-dose patch (15 cm^2) for mild-to-moderately severe AD was launched in several markets in 2013.

Exjade ($926 million, +6% cc), a once-daily oral therapy for chronic transfusional iron overload first approved in 2005 and now approved in more than 100 countries, saw sales increases in the US and Asia. *Exjade* is also approved for the treatment of chronic iron overload in patients with non-transfusion-dependent thalassemia in more than 70 countries.

Xolair ($777 million, +30% cc), a biologic drug for appropriate patients with severe persistent allergic asthma in Europe and moderate-to-severe persistent allergic asthma in the US, is currently approved in more than 90 countries as a treatment for moderate-to-severe or severe persistent allergic asthma. Its

sales continued to grow strongly in Canada, Europe and Latin America. *Xolair* is also approved in the EU, Switzerland and 35 other countries as a treatment for chronic spontaneous urticaria, also known as chronic idiopathic urticaria, for which it is approved in the US and now Canada and Australia. Novartis co-promotes *Xolair* with Genentech/Roche in the US and shares a portion of the operating income, but does not book US sales.

Neoral/*Sandimmun* ($684 million, −6% cc), a micro-emulsion formulation of cyclosporine, is an immunosuppressant to prevent organ rejection following a kidney, liver or heart transplant. *Neoral* is also approved for use in lung transplant in many countries outside of the US. Additionally, it is indicated for treating selected autoimmune disorders such as psoriasis and rheumatoid arthritis. First launched in 1995, *Neoral* is marketed in approximately 100 countries. This product is subject to generic competition.

Voltaren/*Cataflam* ($632 million, −3% cc), is a leading non-steroidal anti-inflammatory drug (NSAID) for the relief of symptoms in rheumatic diseases such as rheumatoid arthritis and osteoarthritis, and for various other inflammatory and pain conditions. *Voltaren*/*Cataflam* was first registered in 1973 and is available in more than 140 countries. This product, which is subject to generic competition, is marketed by the Pharmaceuticals Division in a wide variety of dosage forms, including tablets, drops, suppositories, ampoules and topical therapy. In addition, in various countries, our Sandoz Division markets generic versions of *Voltaren*, our Alcon Division markets *Voltaren* for ophthalmic indications, and our OTC Division markets low-dose oral forms and the topical therapy of *Voltaren* as over-the-counter products. Total sales across all divisions of *Voltaren*/*Cataflam* (diclofenac) amounted to $1.6 billion in 2014 and grew 7.5% in constant currencies against the prior year.

Myfortic ($543 million, −11% cc), a transplantation medicine, is available in more than 90 countries to prevent organ rejection in adult kidney transplant patients. It has experienced a sales decline after the expected launch of generic competition in the US in early 2014. *Myfortic* continues to grow in geographies without generic competition.

Ritalin/*Focalin* ($492 million, −16% cc) is a treatment for attention deficit hyperactivity disorder (ADHD) in children. *Ritalin* and *Ritalin LA* are available in more than 70 and 30 countries, respectively, and are also indicated for narcolepsy. *Ritalin LA* has been granted in 2014 the "adult ADHD indication" in several countries (16 to date). *Focalin* and *Focalin* XR are available in the US and *Focalin* XR is additionally indicated for adults. *Focalin* XR is also approved in Switzerland. *Ritalin* Immediate Release has generic competition in most countries. Some strengths of *Ritalin* and *Focalin* are subject to generic competition in the US.

Femara ($380 million, +2% cc), a treatment for early stage and advanced breast cancer in postmenopausal women, experienced steady sales despite multiple generic entries in the US, Europe and other key markets.

Comtan/*Stalevo* ($371 million, −4% cc), indicated for the treatment of Parkinson's disease, saw sales decline in 2014 due to generic competition in some markets. *Stalevo* (carbidopa, levodopa and entacapone) is indicated for certain Parkinson's disease patients who experience end-of-dose motor fluctuations, known as "wearing off." In July 2014, Stalevo was granted marketing authorization for the treatment of Parkinson's disease in Japan. *Stalevo* is available in more than 90 countries. *Comtan* (entacapone) is also indicated for the treatment of Parkinson's disease patients who experience end-of-dose wearing off and is marketed in 42 countries. Both products are marketed by Novartis under a licensing agreement with the Orion Corporation.

Tegretol ($346 million, +4% cc) a treatment for epilepsy (partial seizures and generalized tonic-clonic seizures) and for several other neuro-psychiatric diseases including bipolar disorders or neuropathic pain, was launched in 1962. It is marketed in approximately 129 countries and, although it faces generic competition in most of them, sales continue to be very stable due to its established position as a gold-standard, first-line treatment. *Tegretol* is also listed as an 'essential medicine' by the World Health Organization.

Zortress/*Certican* ($327 million, +36% cc), a transplantation medicine available in more than 90 countries to prevent organ rejection in adult heart and kidney transplant patients, continued to show strong growth in 2014. It is also approved in over 70 countries for liver transplant patients, including the US and EU countries. Everolimus, the active ingredient in *Zortress*/*Certican*, is marketed for other indications under the trade names *Afinitor*/*Votubia*. Everolimus is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Other Products of Significance

HRT Range ($297 million, −8% cc), encompasses *Vivelle-Dot*/*Estradot*, *Estalis*/*CombiPatch*, *Sequidot* and *Estracomb* MX. *Vivelle-Dot*/*Estradot*, which makes up the bulk of the HRT Range sales, is a transdermal patch formulation of estradiol hemihydrate. This estrogen replacement therapy is used for the treatment of the symptoms of natural or surgically induced menopause and the prevention of postmenopausal osteoporosis. First launched in May 1999, *Vivelle-Dot*/*Estradot* is marketed in approximately 29 countries. This product is subject to generic competition outside the US.

Jakavi ($279 million, +72% cc), is an oral inhibitor of the JAK 1 and JAK 2 tyrosine kinases. It is the first JAK inhibitor indicated for the treatment of disease-related splenomegaly or symptoms in adult patients with primary myelofibrosis (also known as chronic idiopathic myelofibrosis), post-polycythemia vera myelofibrosis or post-essential thromboycythemia myelofibrosis. *Jakavi* is currently approved in more than 65 countries worldwide. Novartis licensed ruxolitinib from Incyte Corporation for development and commercialization outside the US.

Zometa ($264 million, −55% cc), which is used in an oncology setting to reduce or delay skeletal-related events in patients with bone metastases from solid tumors and multiple myeloma, continued to decline as anticipated in 2014 due to generic competition following patent expirations in 2013 on its active ingredient, zoledronic acid.

Trileptal ($265 million, +6% cc), a treatment for epilepsy partial seizures (and generalized tonic-clonic seizures in some countries) was launched in 1973. It is marketed in approximately 97 countries and, although it faces generic competition in most of them, sales are stable due to the continued sales growth outside the EU offsetting the price pressure from generics.

Alcon

Alcon net sales in 2014 grew 3% (+6% in constant currencies, or cc) to $10.8 billion. Growth was driven by key product launches, such as *Centurion* and *LenSx* for cataract surgery, *Azarga* and *Simbrinza* for the treatment of glaucoma, *Ilevro* to treat ocular inflammation, as well as *AirOptix* Colors and the continued rollout of *Dailies Total1* contact lenses.

Regionally, sales were driven by strong performance in emerging growth markets, led by Asia (+13% cc), particularly in China (+23% cc) and Russia (+27% cc).

Latin America delivered robust growth (+17% cc), driven by the Surgical and Ophthalmic Pharmaceuticals franchises.

North America (+4% cc) accelerated its growth in the Surgical franchise, offset by softness in the Ophthalmic Pharmaceuticals franchise. Sales in Europe, the Middle East and Africa (+3% cc) were driven by moderate performance in the Surgical and Ophthalmic Pharmaceuticals franchises. Japan sales

(+3% cc) grew moderately in the Surgical franchise, offsetting weaker growth in Ophthalmic Pharmaceuticals and Vision Care.

	Year ended Dec 31, 2014	Year ended Dec 31, 2013	Change in $	Constant currencies change
	$ m	$ m	%	%
Surgical				
Cataract products	3,174	3,037	5	7
of which IOLs	*1,264*	*1,297*	*(3)*	*0*
Vitreoretinal products	615	592	4	7
Refractive/other	284	268	6	8
Total	**4,073**	**3,897**	**5**	**7**
Ophthalmic Pharmaceuticals				
Glaucoma	1,319	1,265	4	7
Allergy/otic/nasal	887	939	(6)	(4)
Infection/inflammation	1,066	1,019	5	7
Dry eye	608	558	9	12
Other	331	327	1	6
Total	**4,211**	**4,108**	**3**	**5**
Vision Care				
Contact lenses	1,897	1,793	6	7
Contact lens care	646	698	(7)	(5)
Total	**2,543**	**2,491**	**2**	**4**
Total net sales	**10,827**	**10,496**	**3**	**6**

Surgical

Surgical franchise sales rose 5% (+7% cc) to $4.1 billion. The increase was driven by strong equipment sales, led by the *Centurion* Vision System for phacoemulsification cataract surgery, the continued growth of the *LenSx* femtosecond laser for refractive cataract surgery, strong sales of vitreoretinal and cataract disposable surgical equipment, as well as the launch of the *Verion* image-guided system.

Alcon experienced a more modest increase in intraocular lens (IOL) sales, driven by strong competition in the US, Japan and EU.

Ophthalmic Pharmaceuticals

Ophthalmic Pharmaceuticals sales grew 3% (+5% cc) to $4.2 billion despite a weak allergy season in the US. Sales were led by glaucoma products such as *DuoTrav*, *Azarga* and the newly-launched *Simbrinza*. *Systane* eye drops to treat the symptoms of dry eye saw double-digit growth.

Within the Infection/Inflammation segment, sales growth (+7% cc) was driven by *Ilevro* and *Durezol*. *Jetrea*, a first-in-class treatment for symptomatic vitreomacular adhesion/traction, continued to gain regulatory approvals, notably in Latin America and Asia.

Vision Care

Vision Care sales increased 2% (+4% cc) to $2.5 billion. Contact lens sales rose 6% (+7% cc), driven by key launches of *AirOptix* Colors, *Dailies AquaComfort Plus* (*DACP*) Toric, and *DACP* Multifocal, as well as the continued rollout of *Dailies Total1* worldwide.

At the same time, contact lens care solutions declined (−7% cc), driven by market shifts to daily disposable lenses, as well as competitive pressure in the US.

Sandoz

Sandoz had net sales of $9.6 billion in 2014, up 4% (+7% in constant currencies, or cc) from the prior year, driven by a 15 percentage points increase in volume, more than offsetting 8 percentage points of price erosion. Performance was driven by strong retail generics and biosimilars sales growth in Asia (excluding Japan) (+15% cc), the US (+14% cc), and Latin America (+10% cc). Sales growth in Western Europe (excluding Germany) was solid at 4% (cc).

Sandoz continued to strengthen its global leadership position in differentiated generics, including medicines that are difficult to develop and manufacture. Differentiated generics accounted for 45% of Sandoz sales.

	Year ended Dec 31, 2014	Year ended Dec 31, 2013	Change in $	Constant currency change
	$ m	$ m	%	%
Retail Generics	7,933	7,663	4	6
Biopharmaceuticals & Oncology Injectables	1,094	888	23	25
Anti-Infectives	535	608	(12)	(12)
Total	**9,562**	**9,159**	**4**	**7**

Retail Generics

In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals. It includes the specialty areas of Dermatology, Respiratory and Ophthalmics. Retail Generics sales worldwide rose 4% (+6% cc) to $7.9 billion. US sales grew 10% (cc), dampened by customer consolidation. Sales in Western Europe (excluding Germany) rose 3% (cc), driven by strong growth in Italy, Nordics and the United Kingdom. German sales were down 1% (cc) due to weak market demand. Emerging growth markets grew strongly, driven by Asia (excluding Japan), up 14% (cc); Central and Eastern Europe, up 4% (cc); and Latin America, up 8% (cc).

Biopharmaceuticals & Oncology Injectables

In Biopharmaceuticals, Sandoz develops, manufactures and markets protein- and other biotechnology-based products, which are known as biosimilars, or follow-on biologics. Sandoz also provides biotechnology manufacturing services to other companies. Sales of Biopharmaceuticals & Oncology Injectables rose 23% (+25% cc) to $1.1 billion. In 2014, Sandoz continued to strengthen its global leadership position in biosimilars. In May, Sandoz was the first to apply for approval of a biosimilar in the US under the new biosimilar pathway created in the Biologics Price Competition and Innovation Act of 2009, with filgrastim, which is used to decrease the incidence of infection among cancer patients receiving chemotherapy. In January 2015, a US Food and Drug Administration advisory body recommended approval. Sandoz leads the industry with six biosimilars in Phase III clinical trials or registration.

Three Sandoz biosimilar products occupy the number one position in market share in their respective categories—*Omnitrope*, a human growth hormone; *Binocrit* for anemia; and filgrastim under the brand name *Zarzio*. Biosimilars sales in 2014 amounted to $514 million, up 23% (cc) from the previous year, mainly due to continued strong growth across all our brands and regions.

Sandoz also develops, manufactures and markets cytotoxic products for traditional cancer chemotherapy. The Oncology Injectables business now includes a portfolio of more than 25 products. Oncology Injectables sales in 2014 amounted to $477 million, up 29% (cc) from the previous year, mainly due to recent launches in the US.

Anti-Infectives

In Anti-Infectives, Sandoz manufactures active pharmaceutical ingredients and intermediates—mainly antibiotics—for sale under the Sandoz name and by third-party customers. Anti-Infectives sales in 2014 amounted to $535 million, down 12% (cc) from the previous year, as production capacities were temporarily constrained due to quality upgrades.

Discontinuing Operations

Vaccines

Vaccines net sales amounted to $1.5 billion in 2014, down 23% (−21% in constant currencies, or cc) from $2.0 billion in 2013. However, 2013 included the net sales of the divested blood transfusion diagnostics unit. Excluding the diagnostics unit, Vaccines net sales increased 8% (+10% cc) from $1.4 billion a year ago. Demand was solid across the product portfolio, particularly in the Meningitis franchise, with the recent launch of *Bexsero*.

Influenza

Influenza vaccines sales were $476 million, down 10% (−8% cc). Novartis was the first to market with vaccines for the 2014—2015 influenza season and shipped 43 million doses of *Flucelvax* and *Fluvirin* in the US.

Meningitis

Meningitis vaccine sales increased 37% to $454 million (+41% cc), benefiting from the strong performance of *Menveo*, *Menjugate* and *Bexsero*. *Bexsero* was awarded breakthrough therapy designation by the US Food and Drug Administration in April 2014, and was approved by the FDA in January 2015. In the United Kingdom, an advisory body recommended including *Bexsero* in the national immunization schedule.

Travel and Pediatrics

Sales of travel and pediatric vaccines grew 9% (+11% cc) to $607 million, driven by tick-borne encephalitis and *Ixiaro* vaccine sales.

Consumer Health

Consumer Health saw sales increase 5% (+8% in constant currencies, or cc) to $4.3 billion in 2014.

Within OTC, *Voltaren*, the seventh-largest global OTC brand, was a key growth driver. Animal Health performance benefited from the 2013 North American re-launch of *Sentinel*, a product for prevention and control of parasites in dogs.

OTC

OTC sales reached $3.1 billion, up 9% (cc) over the previous year, driven by strong growth of all strategic brands, including *Voltaren* (+22% cc). North America achieved double-digit growth, due largely to increased sales of *Voltaren* in Canada and the US re-launch of *Theraflu* shipments in July. Emerging growth markets also performed strongly with double-digit growth (cc) led by China and Brazil, and with robust growth in Russia.

Animal Health

Animal Health achieved sales of $1.2 billion (+5% cc), boosted by the 2013 North American re-launch of *Sentinel*. Excluding *Sentinel*, Animal Health sales advanced in key markets. Sales of *Deramaxx* and *Onsior*, both non-steroidal anti-inflammatory drugs, continued to grow strongly.

Group operating income

Group operating income amounted to $10.7 billion (−2%, +5% cc). Operating income margin was 18.5% of net sales. Group net income rose 11% (+17% cc) to $10.3 billion. Earnings per share (EPS) rose 12% (+18% cc) to $4.21. Free cash flow in 2014 increased by 8% to $10.8 billion, mainly due to higher cash flows from operating activities.

On a more comparable basis, excluding the 2013 results of the blood transfusion diagnostics unit, divested on January 9, 2014, Group operating income increased 1% (+7% cc) to $10.7 billion. Group operating income included a $0.9 billion exceptional gain from the divestment of the blood transfusion diagnostics unit to Grifols S.A. and a $0.3 billion commercial settlement gain which was offset by an exceptional impairment charge of $1.1 billion related to the pending divestment to CSL of the influenza vaccines business. The negative currency impact of 6 percentage points was mainly due to the weakening of emerging market currencies (especially the ruble) and the yen against the US dollar. Operating income margin was 18.5% of net sales, which was 0.1 percentage points less than the prior year. A 0.8 percentage point increase (in constant currencies) from the prior year, was offset by a negative currency impact of 0.9 percentage points. IFRS requires that depreciation and amortization charges on tangible and intangible assets related to the discontinuing operations of the OTC, Animal Health and Vaccines divisions cease from the April 2014 portfolio transformation announcement date. This had a positive impact of $277 million for the year, improving operating income margin by 0.5 percentage points (cc).

Core key figures[1]

	Year ended Dec 31, 2014	excluding Diagnostics Year ended Dec 31, 2013[2]	Change in $ (excluding Diagnostics)[2]	Change in constant currencies (excluding Diagnostics)[2]
	$ m	$ m	%	%
Core gross profit	**42,093**	**41,763**	**1**	**3**
Marketing & Sales	(14,167)	(14,477)	2	0
Research & Development	(9,572)	(9,613)	0	0
General & Administration	(2,983)	(3,014)	1	0
Other income	586	799	(27)	(27)
Other expense	(1,341)	(1,267)	(6)	(5)
Core operating income	**14,616**	**14,191**	**3**	**8**
Core return on net sales (%)	25.2	24.7		
Core net income	**12,755**	**12,351**	**3**	**8**
Core basic earnings per share ($)	**5.23**	**5.01**	**4**	**10**

(1) For an explanation of non-IFRS measures and reconciliation tables, see "—Non-IFRS Measures as defined by Novartis".

(2) 2013 excludes core operating income of $294 million and core net income of $182 million of the blood transfusion diagnostics unit divested on January 9, 2014.

The adjustments made to Group operating income to arrive at core operating income amounted to $3.9 billion (2013: $3.5 billion). These adjustments include amortization of intangible assets of $2.8 billion; the exceptional non-tax deductible US Healthcare Fee levy of $204 million in the year due to a change in regulations; impairment charges of $1.6 billion including an exceptional impairment charge of $1.1 billion; related to the pending divestment to CSL of the influenza vaccines business; and net restructuring charges of $0.7 billion. These were partly offset by the $0.9 billion pre-tax gain from the divestment of the blood transfusion diagnostics unit; a $302 million commercial settlement gain; and a $248 million gain from selling a Novartis Venture Fund investment.

Excluding these items, Group core operating income increased 3% (+8% cc) to $14.6 billion. Core operating income margin in constant currencies increased 1.2 percentage points; currency had a negative impact of 0.7 percentage points, resulting in a net increase of 0.5 percentage points to 25.2% of net sales. The cessation of depreciation charges related to the discontinuing operations had a positive impact of $134 million, improving the core operating income margin by 0.2 percentage points. Additional comments on the changes in the core operating income by division, see "—Non IFRS Measures as Defined by Novartis".

Operating Income by Segment

The following table provides an overview of operating income by segment:

	Year ended Dec 31, 2014	% of net sales	Year ended Dec 31, 2013	% of net sales	Change in $	Change in constant currencies
	$ m		$ m		%	%
Pharmaceuticals	**8,471**	**26.6**	**9,376**	**29.1**	**(10)**	**(5)**
Alcon	**1,597**	**14.8**	**1,232**	**11.7**	**30**	**43**
Sandoz	**1,088**	**11.4**	**1,028**	**11.2**	**6**	**14**
Corporate continuing operations	(67)		(653)		nm	nm
Continuing operations	**11,089**	**21.3**	**10,983**	**21.2**	**1**	**7**
Discontinuing operations[1]	(353)	(6.1)	(73)	(1.2)	nm	nm
Group operating income	**10,736**	**18.5**	**10,910**	**18.8**	**(2)**	**5**

nm = not meaningful

[1] Discontinuing operations are explained in more detail, see "—Factors affecting comparability of year-on-year results of operations" and "Item 18. Financial Statements—Notes 3 and 30".

The following table provides an overview of core operating income by segment:

	Year ended Dec 31, 2014	% of net sales	Year ended Dec 31, 2013	% of net sales	Change in $	Change in constant currencies
	$ m		$ m		%	%
Pharmaceuticals	**9,514**	**29.9**	**9,523**	**29.6**	**0**	**4**
Alcon	**3,811**	**35.2**	**3,694**	**35.2**	**3**	**8**
Sandoz	**1,571**	**16.4**	**1,541**	**16.8**	**2**	**7**
Corporate continuing operations	(423)		(551)		23	25
Continuing operations	**14,473**	**27.7**	**14,207**	**27.4**	**2**	**7**
Discontinuing operations[1]	143	2.5	(16)	(0.3)	nm	nm
Group core operating income[1]	**14,616**	**25.2**	**14,191**	**24.7**	**3**	**8**

nm = not meaningful

[1] 2013 excludes core operating income of $294 million and core net income of $182 million of the blood transfusion diagnostics unit divested on January 9, 2014.

Continuing Operations

Total operating income from continuing operations of $11.1 billion in 2014 increased 1% (+7% cc) compared to $11.0 billion in the prior year.

Total core operating income from continuing operations of $14.5 billion in 2014 increased 2% (+7% cc) compared to $14.2 billion in the prior year.

Pharmaceuticals

Operating income was $8.5 billion (−10%, −5% cc), with the decline mainly due to restructuring and other exceptional charges.

Core operating income, which excludes certain exceptional items, was $9.5 billion (0%, +4% cc). Core operating income margin improved by 0.3 percentage points to 29.9% of net sales, despite the negative effect of 0.8 percentage points of changing currency exchange rates.

Research and development

Research and development for the whole of Novartis totaled $9.9 billion and increased 1% compared to the prior year. As shown in the table, in the Pharmaceuticals Division, Research and Exploratory Development expenditure amounted to $2.7 billion in 2014, up by 2% from 2013, and Confirmatory

Development expenditures amounted to $4.6 billion, practically unchanged from 2013. As shown in the following table:

	Year ended Dec 31, 2014		Year ended Dec 31, 2013	
		Core R&D[1]		Core R&D[1]
	$ m	$ m	$ m	$ m
Research and Exploratory Development	2,724	2,654	2,664	2,611
Confirmatory Development	4,607	4,343	4,578	4,550
Total	**7,331**	**6,997**	**7,242**	**7,161**
% of Pharmaceuticals net sales	23.1%	22.0%	22.5%	22.2%

(1) Core excludes impairments, amortization and certain exceptional items.

Alcon

Operating income increased 30% (+43% cc) to $1.6 billion, driven by operational performance, as well as the ending in 2013 of charges related to the acquisition of Alcon.

Core operating income, which excludes certain items, rose +3% (+8% cc) to $3.8 billion. Core operating income margin increased 0.6 percentage points in constant currencies, however that was fully offset by a 0.6 percentage point negative currency effect, resulting in a stable core margin of 35.2% of sales.

Sandoz

Operating income increased 6% (+14% cc) to $1.1 billion. Core operating income, which excludes certain exceptional items, was $1.6 billion (+2%, +7% cc), impacted by high price erosion. Core operating income margin decreased by 0.4 percentage points to 16.4% of net sales, mainly due to a negative impact of 0.5 percentage points due to changing currency exchange rates.

Corporate Income and Expense, Net

Corporate income and expense of continuing operations amounted to a net expense of $67 million in 2014 compared to $653 million in the prior year, mainly due to a $456 million increase in other revenues principally related to the retained Vaccines intellectual property rights, including a $302 million commercial settlement gain and a $248 million gain from the sale of a Novartis Venture Fund investment.

Discontinuing Operations

Total operating loss from discontinuing operations amounted to $353 million in 2014 compared to a loss of $73 million in the prior year.

Total core operating income from discontinuing operations amounted to $143 million in 2014 compared to a loss of $16 million in the prior year.

Vaccines

Operating loss was $552 million in 2014, compared to a loss of $238 million a year earlier, driven by a $1.1 billion impairment charge for the influenza vaccines business, which was mostly offset by the $876 million exceptional gain from the divestment of the blood transfusion diagnostics unit.

Core operating loss, which excludes certain exceptional items, was $290 million, compared to a loss of $302 million in 2013.

Consumer Health

Operating income reached $470 million compared to $178 million in the prior year, driven by higher gross margin from incremental sales and lower remediation and restructuring expenses for the manufacturing plant in Lincoln, Nebraska, US.

Core operating income increased 52% (+72% cc) to $452 million. Core operating income margin increased by 3.3 percentage points to 10.6% of net sales.

Group Income and Expense, Net

Total expenses recognized in Corporate discontinuing operations in 2014 amounted to $271 million related to certain portfolio transformation transaction and other related expenses compared to a expense of $13 million in 2013.

Non-operating Income & Expense

The following table provides an overview of non-operating income and expense:

	Year ended Dec 31, 2014	Year ended Dec 31, 2013	Change in $	Change in constant currencies
	$ m	$ m	%	%
Group operating income	**10,736**	**10,910**	**(2)**	**5**
Income from associated companies	1,920	600	220	220
Interest expense	(704)	(683)	(3)	(6)
Other financial income and expense	(31)	(92)	66	31
Income before taxes	**11,921**	**10,735**	**11**	**17**
Taxes	(1,641)	(1,443)	(14)	(20)
Group net income	**10,280**	**9,292**	**11**	**17**
Attributable to:				
Shareholders of Novartis AG	*10,210*	*9,175*	*11*	*18*
Non-controlling interests	*70*	*117*	*(40)*	*(41)*
Basic EPS ($)	**4.21**	**3.76**	**12**	**18**

The following table provides an overview of core non-operating income and expense:

	Year ended Dec 31, 2014	Year ended Dec 31, 2013[1]	Change in $	Change in constant currencies
	$ m	$ m	%	%
Group core operating income	**14,616**	**14,191**	**3**	**8**
Income from associated companies	945	877	8	8
Interest expense	(704)	(683)	(3)	(6)
Other financial income and expense	(31)	(48)	35	31
Group core income before taxes	**14,826**	**14,337**	**3**	**9**
Taxes	(2,071)	(1,986)	(4)	(10)
Group core net income	**12,755**	**12,351**	**3**	**8**
Attributable to:				
Shareholders of Novartis AG	*12,685*	*12,234*	*4*	*9*
Non-controlling interests	*70*	*117*	*(40)*	*(41)*
Core basic EPS ($)	**5.23**	**5.01**	**4**	**10**

(1) 2013 excludes the blood transfusion diagnostics unit divested on January 9, 2014.

Income from associated companies

Income from associated companies amounted to $1.9 billion in 2014, compared to $600 million in 2013. The increase was mainly due to the gains recognized on the sale of shares of LTS Lohmann Therapie-Systeme AG, Germany, (LTS) and on the sale of the shares of Idenix Pharmaceuticals, Inc., US, (Idenix) which amounted to $421 million and $812 million, respectively. An additional income of $64 million was recorded on investments in associated companies held by the Novartis Venture Funds, which have been accounted at fair value from January 1, 2014 onwards, consistent with other investments held by these Funds, instead of using the equity method of accounting. The contribution from the investment in Roche of $599 million was approximately in line with the prior-year level.

Core income from associated companies increased to $945 million from $877 million in the prior-year period.

Interest Expense and other financial income and expense

Interest expense increased slightly to $704 million from $683 million in the prior year. Other financial income and expense amounted to a net expense of $31 million, compared to $92 million in 2013, mainly as a result of hedging gains.

Taxes

The total Group's tax rate in the full year of 2014 increased to 13.8% from 13.4%, or 12.9% excluding the divested transfusion diagnostics unit, principally due to the impact of taxes on the various exceptional gains and impairments and other exceptional charges which occurred during the year.

The core tax rate increased slightly to 14.0% from 13.9% in 2013.

Net Income

Group net income of $10.3 billion was up 11% (+17%) or 12% (+19% cc), excluding the divested blood transfusion diagnostics unit, growing ahead of operating income mainly due to higher income from

associated companies, which included a gain of $0.8 billion from the sale of the shares of Idenix to Merck & Co., and a gain of $0.4 billion from the divestment of the shareholding in LTS, partly offset by an increase in tax expense.

EPS

Earnings per share (EPS) was $4.21 per share, up 12% (+18% cc), or on a more comparable basis excluding the 2013 impact of the blood transfusion diagnostics unit up 14% (+20% cc), growing ahead of net income due to lower average outstanding shares and lower minority interests.

Group core net income of $12.8 billion was up 3% (+8% cc), in line with core operating income.

Core EPS was $5.23 (+4%, +10% cc), growing ahead of core net income due to lower average outstanding shares and lower minority interests.

2013 Compared to 2012

Key figures

	Year ended Dec 31, 2013	Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Net sales	**57,920**	**56,673**	**2**	**4**
Other revenues	911	888	3	2
Cost of goods sold	(19,608)	(18,756)	(5)	(5)
Gross profit	**39,223**	**38,805**	**1**	**4**
Marketing & Sales	(14,549)	(14,353)	(1)	(3)
Research & Development	(9,852)	(9,332)	(6)	(6)
General & Administration	(3,060)	(2,937)	(4)	(5)
Other income	1,367	1,049	30	30
Other expense	(2,219)	(2,039)	(9)	(9)
Operating income	**10,910**	**11,193**	**(3)**	**5**
Income from associated companies	600	552	9	9
Interest expense	(683)	(724)	6	6
Other financial income and expense	(92)	(96)	4	30
Income before taxes	**10,735**	**10,925**	**(2)**	**6**
Taxes	(1,443)	(1,542)	6	(1)
Net income	**9,292**	**9,383**	**(1)**	**7**
Attributable to:				
Shareholders of Novartis AG	*9,175*	*9,270*	*(1)*	*7*
Non-controlling interests	*117*	*113*	*4*	*4*
Basic earnings per share ($)	**3.76**	**3.83**	**(2)**	**6**
Free cash flow	**9,945**	**11,383**	**(13)**	

Core Key Figures

	Year ended Dec 31, 2013	Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Core gross profit	**42,158**	**41,847**	**1**	**3**
Marketing & Sales	(14,522)	(14,352)	(1)	(3)
Research & Development	(9,642)	(9,116)	(6)	(6)
General & Administration	(3,035)	(2,923)	(4)	(4)
Other income	808	675	20	20
Other expense	(1,282)	(1,289)	1	0
Core operating income	**14,485**	**14,842**	**(2)**	**3**
Core net income	**12,533**	**12,576**	**0**	**5**
Core basic earnings per share ($)	**5.09**	**5.15**	**(1)**	**4**

Group overview

Group net sales increased to $57.9 billion in the full year, up 2% (+4% cc) over 2012. Currency had a negative impact of 2 percentage points, mainly from the weakening yen and emerging market currencies against the US dollar.

Excluding the impact of generic competition, underlying sales grew 8% in constant currencies. Growth products[1] contributed $18.1 billion or 31% of Group net sales, up from 28% in 2012. Loss of exclusivity impacted sales by approximately $2.2 billion, mainly due to *Diovan* and *Zometa/Aclasta.*

Group operating income was $10.9 billion (−3%, +5% cc). The negative currency impact of 8 percentage points was greater than the currency impact on sales, as the yen and emerging market currencies represent a larger proportion of operating income than sales.

The adjustments made to Group operating income to arrive at core operating income amounted to $3.6 billion (2012: $3.6 billion). These adjustments included $3.0 billion (2012: $2.9 billion) of amortization of intangible assets, $0.3 billion (2012: $0.4 billion) of impairment charges, $0.3 billion (2012: $0.3 billion) of acquisition-related items and in 2012 $0.1 billion of other exceptional items.

Significant exceptional items in 2013, which exclude amortization, included $331 million of integration costs, mainly in Alcon; $259 million of impairment charges, of which $74 million was in Pharmaceuticals, $61 million in Alcon, $59 million in Corporate and $65 million in other divisions; restructuring charges totaling $226 million, mainly $122 million in Pharmaceuticals, and $77 million in Alcon, offset by gains from divesting products and financial assets of $313 million in Pharmaceuticals and a net $117 million of other exceptional expenses. Prior year adjustments of significant exceptional items, which exclude amortization, were mainly driven by $330 million of integration costs principally from Alcon; $356 million of impairment charges of which the majority was in Pharmaceuticals; $272 million of restructuring charges offset by gains from divesting products and financial assets of $144 million; and a net $41 million of exceptional income.

Excluding these items, Group core operating income in 2013 was $14.5 billion (−2%, +3% cc). Excluding the impact of generic competition, underlying core operating income grew 15% in constant currencies. Core operating income margin in constant currencies decreased by 0.3 percentage points, mainly from lower core gross margins due to higher royalties and generic erosion as well as R&D investment in Pharmaceuticals; currency had a negative impact of 0.9 percentage points, resulting in a net decrease of 1.2 percentage points to 25.0% of net sales.

Group net income of $9.3 billion was down 1% in reported terms, but up 7% in constant currencies due to operating income performance, higher income from associated companies and lower net financial expense.

EPS was down 2% (+6% cc), in line with net income, to $3.76.

Group core net income was $12.5 billion (0%, +5% cc), ahead of core operating income mainly due to higher income from associated companies and lower net financial expenses. Core EPS was $5.09 (−1%, +4% cc), largely following core net income.

For the full year, free cash flow of $9.9 billion was 13% below the prior year. Aside from the significant currency impact, major reasons for the decline were increased trade receivables and higher capital investments in manufacturing and research facilities.

[1] "Growth products" are defined as products launched in 2008 or later, or products with exclusivity until at least 2017 in key markets (EU, US, Japan) (except Sandoz, which includes only products launched in the last 24 months). The definition of growth products is maintained in all comparisons to prior year.

Net Sales by Segment

	Year ended Dec 31, 2013	Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Pharmaceuticals	32,214	32,153	0	3
Alcon	10,496	10,225	3	5
Sandoz	9,159	8,702	5	5
Continuing Operations	**51,869**	**51,080**	**2**	**4**
Discontinuing Operations[(1)]	6,051	5,593	8	9
Net sales	**57,920**	**56,673**	**2**	**4**

(1) Discontinuing operations are explained in more detail, see "—Factors affecting comparability of year-on-year results of operations" and "Item 18. Financial Statements—Note 30".

	Year ended Dec 31, 2013	Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Established Markets*	**43,184**	**42,834**	**1**	**2**
Emerging Growth Markets*	**14,736**	**13,839**	**6**	**10**
Net Sales	**57,920**	**56,673**	**2**	**4**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Continuing Operations

Pharmaceuticals

Pharmaceuticals delivered net sales of $32.2 billion (0%, +3% cc) for the full year, driven by strong volume growth (+9 percentage points) and pricing (+1 percentage point), which more than offset the impact of generic competition ($2.2 billion, −7 percentage points). Growth products[1] grew 25% in constant currencies and contributed $12.3 billion or 38% of division net sales in 2013, compared to 31% in 2012.

Europe ($11.0 billion, +5% cc) benefited from the continued strong performance of growth products. The US ($10.3 billion, −1% cc) was impacted by generic competition for *Zometa*/*Aclasta* and *Diovan HCT*. Japan's performance ($3.3 billion, +1% cc) improved versus prior year due to new launches. Emerging Growth Markets[4] ($7.7 billion, +9% cc) grew strongly.

1 "Growth products" are defined as products launched in 2008 or later, or products with exclusivity until at least 2017 in key markets (EU, US, Japan) (except Sandoz, which includes only products launched in the last 24 months). The definition of growth products is maintained in all comparisons to prior year.

TOP 20 PHARMACEUTICALS DIVISION PRODUCT NET SALES—2013

Brands	Business franchise	Indication	Net sales in United States	Change in constant currencies	Net sales in Rest of world	Change in constant currencies	Total net sales	Change in $	Change in constant currencies
			$ m	%	$ m	%	$ m	%	%
Gleevec*/*Glivec	Oncology	Chronic myeloid leukemia	1,939	14	2,754	(6)	**4,693**	**0**	**1**
Diovan*/*Co—Diovan	Primary Care	Hypertension	1,679	(20)	1,845	(12)	**3,524**	**(20)**	**(16)**
Lucentis	Ophthalmics	Age-related macular degeneration			2,383	1	**2,383**	**(1)**	**1**
Gilenya	Neuroscience	Relapsing multiple sclerosis	1,023	41	911	94	**1,934**	**62**	**62**
Sandostatin	Oncology	Acromegaly	710	9	879	6	**1,589**	**5**	**8**
Exforge	Primary Care	Hypertension	356	(1)	1,100	16	**1,456**	**8**	**12**
Afinitor*/*Votubia	Oncology	Breast cancer	691	68	618	64	**1,309**	**64**	**66**
Tasigna	Oncology	Chronic myeloid leukemia	428	22	838	36	**1,266**	**27**	**31**
Galvus	Primary Care	Diabetes			1,200	40	**1,200**	**32**	**40**
***Exelon*/*Exelon* Patch**	Neuroscience	Alzheimer's disease	457	7	575	(5)	**1,032**	**(2)**	**0**
Exjade	Oncology	Iron chelator	265	6	628	4	**893**	**3**	**4**
Neoral*/*Sandimmun	Integrated Hospital Care	Transplantation	56	(13)	694	(3)	**750**	**(9)**	**(4)**
***Voltaren* (excl. other divisions)**	Established medicines	Inflammation/pain	2	100	673	(4)	**675**	**(11)**	**(4)**
Myfortic	Integrated Hospital Care	Transplantation	270	13	367	13	**637**	**10**	**13**
Xolair	Primary Care	Asthma			613	24	**613**	**22**	**24**
Zometa	Oncology	Cancer complications	115	(80)	485	(30)	**600**	**(53)**	**(52)**
Ritalin*/*Focalin	Established medicines	Attention deficit/ hyperactivity disorder	435	8	159	6	**594**	**7**	**8**
Comtan*/*Stalevo	Neuroscience	Parkinson's disease	33	(78)	368	0	**401**	**(24)**	**(21)**
TOBI	Critical Care	Cystic fibrosis	268	28	119	12	**387**	**22**	**22**
Femara	Oncology	Breast cancer	19	(14)	365	(7)	**384**	**(12)**	**(7)**
Top 20 products total			**8,746**	**2**	**17,574**	**5**	**26,320**	**1**	**4**
Rest of portfolio			1,510	(15)	4,384	3	**5,894**	**(5)**	**(2)**
Total Division sales			**10,256**	**(1)**	**21,958**	**5**	**32,214**	**0**	**3**

Pharmaceuticals Division Product Highlights—Leading Products

Net sales growth data below refer to 2013 worldwide performance. Growth rates are not provided for some products since they are not meaningful.

Gleevec/*Glivec* ($4.7 billion, +1% cc) maintained steady sales as a treatment for adult patients with metastatic and/or unresectable KIT+ gastrointestinal stromal tumors (GIST), as an adjuvant treatment for certain adult patients following resection of KIT+ GIST, and as a targeted therapy for Philadelphia chromosome-positive chronic myeloid leukemia (Ph+ CML). In 2013, *Gleevec*/*Glivec* was approved in the US and EU for treatment of acute lymphocytic leukemia in pediatric patients. Our Bcr-Abl franchise, which consists of *Gleevec*/*Glivec* and *Tasigna*, grew strongly in 2013, reaching net sales of $6.0 billion (+7% cc).

Diovan Group ($3.5 billion, −16% cc), consisting of *Diovan* monotherapy and the combination product *Co—Diovan*/*Diovan HCT*, saw worldwide sales decline due to the loss of exclusivity in the EU, US, Canada and other markets, as well as the impact of the conflict of interest issue regarding valsartan

investigator-initiated trials in Japan. Continued growth was seen in China and select markets in Latin America, Asia Pacific, the Middle East, and Africa. With respect to *Diovan* monotherapy in the US (90% of *Diovan* Group sales in the US in 2013), no generic competitor has yet been approved by the FDA. *Diovan HCT*, however, already faces competition from multiple generic competitors in the US.

Lucentis ($2.4 billion, +1% cc) saw total sales figures equal to the previous year and double-digit volume growth, despite entry of licensed competition and one-time price adjustments due to reimbursement expansion in recently launched new indications. *Lucentis* is the only anti-VEGF therapy licensed in many countries for the treatment of four ocular indications: wet age-related macular degeneration (wet AMD), visual impairment due to diabetic macular edema (DME), visual impairment due to macular edema secondary to retinal vein occlusion (RVO, including both branch and central RVO), and visual impairment due to choroidal neovascularization secondary to pathologic myopia (mCNV). *Lucentis* is approved in more than 100 countries to treat patients with the first three conditions, and in more than 40 countries for the fourth condition. Since its launch in 2007, there have been more than 2.2 million patient-treatment years of exposure for *Lucentis. Lucentis* received several regulatory approvals in 2013: EU approval in July for the treatment of visual impairment due to mCNV; Japan approval in August as a treatment for visual impairment due to mCNV and for visual impairment due to RVO, including both branch and central RVO; and EU approval in October for a pre-filled syringe. Genentech/Roche holds the rights to *Lucentis* in the US.

Gilenya ($1.9 billion, +62% cc) continued to show rapid growth as the first once-daily oral therapy approved to treat relapsing forms of multiple sclerosis (MS) and the first in a new class of compounds called sphingosine 1-phosphate receptor modulators. In the US, *Gilenya* is indicated for relapsing forms of MS. In the EU, *Gilenya* is indicated for adult patients with highly active relapsing remitting MS (RRMS) defined as either high disease activity despite treatment with beta interferon, or rapidly evolving severe RRMS. In an expanding oral market with multiple options, *Gilenya* is the only oral MS treatment that provides early and long-term reduction in the rate of brain volume loss and enduring high efficacy across all key disease activity measures (disability progression, relapses, MRI activity, brain volume loss). *Gilenya* is proven to consistently limit brain volume loss, seen within 6 months and sustained for up to 4 years in Phase III studies and up to 7 years in a Phase II study. In addition, *Gilenya* is the only oral disease-modifying therapy with proven superior relapse reduction versus an active comparator (61% in interferon non-responders). *Gilenya* has shown very good tolerability over the long term. Nine in 10 patients and their physicians confirm favorable tolerability in a real-world setting. As of December 2013, more than 84500 patients have been treated in clinical trials and in a post-marketing setting, and there are currently more than 118000 patient years of exposure. *Gilenya* is currently approved in over 78 countries around the world, and is licensed from Mitsubishi Tanabe Pharma Corporation.

Sandostatin ($1.6 billion, +8% cc), a somatostatin analogue used as a treatment for patients with functional gastroenteropancreatic tumors as well as acromegaly, continued to benefit from increasing use of *Sandostatin LAR* in key markets. A new presentation of *Sandostatin LAR*, which includes an enhanced diluent, safety needle and vial adapter, has been approved in 40 countries to date with additional filings underway. *Sandostatin LAR* is also approved in 44 countries for the delay of disease progression in patients with advanced neuroendocrine tumors of the midgut or unknown primary tumor location. *Sandostatin* was first launched in 1988 and is approved in more than 100 countries.

Exforge Group ($1.5 billion, +12% cc) includes two medicines approved for the treatment of hypertension *Exforge*, a single-pill combination of the angiotensin receptor blocker (ARB) valsartan and the calcium channel blocker amlodipine besylate; and *Exforge HCT*, a single pill combining an ARB (valsartan), calcium channel blocker (amlodipine) and a diuretic (hydrochlorothiazide). *Exforge* Group continued to grow at a double-digit rate, fueled by robust growth in Europe, Latin America, Asia Pacific, and the Middle East, as well as ongoing *Exforge HCT* launches in Asia and Latin America. *Exforge* is now available in more than 100 countries. *Exforge HCT* is available in over 60 countries.

Afinitor/*Votubia* ($1.3 billion, +66% cc), an oral inhibitor of the mTOR pathway, continued its strong growth trajectory in 2013 with sales across multiple indications. *Afinitor* is approved in more than 100 countries for the treatment of various cancers including HR+/HER2− advanced breast cancer, advanced renal cell carcinoma and advanced pancreatic neuroendocrine tumors (NET). Everolimus, the active ingredient in *Afinitor*/*Votubia*, is also available in more than 60 countries for the treatment of renal angiomyolipomas and/or subependymal giant cell astrocytomas (SEGA) associated with tuberous sclerosis complex (TSC), including as a dispersible tablet formulation in the US and EU for SEGA. Everolimus is also in Phase III development for patients with gastrointestinal and lung NET, HER2+ breast cancer, lymphoma and TSC-related seizures. Everolimus is available under the trade names *Zortress*/*Certican* for use in other non-oncology indications and is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Tasigna ($1.3 billion, +31% cc) grew rapidly as a more effective, targeted therapy for certain adult patients with Ph+ CML. It is currently approved as a first-line therapy for newly diagnosed patients with Ph+ CML in the chronic phase in more than 85 countries globally, including the US, EU, Japan and Switzerland, with additional submissions pending worldwide. *Tasigna* (nilotinib) is also approved in more than 110 countries as a second-line treatment for patients with Ph+ CML in chronic and/or accelerated phase who are resistant or intolerant to existing treatment, such as *Gleevec*/*Glivec*. *Tasigna* market share continues to rise in markets around the world in both the first-line and second-line settings. This product is part of our Bcr-Abl franchise with net sales of $6.0 billion, (+7% cc), which also includes *Gleevec*/*Glivec*. Novartis has initiated a global clinical trial program to evaluate the potential for Ph+ CML patients to maintain deep molecular response after stopping nilotinib therapy—a concept called treatment-free remission.

Galvus Group ($1.2 billion, +40% cc), which includes *Galvus*, an oral treatment for type 2 diabetes, and *Eucreas*, a single-pill combination of vildagliptin (the active ingredient in *Galvus*) and metformin, continued to deliver strong growth across markets including Europe, Japan, Latin America, and Asia Pacific. Performance was driven by a continued focus on patients whose diabetes remains uncontrolled on metformin, as well as an expansion of usage in new patient segments based on new indications. *Galvus* and *Eucreas* are currently approved in more than 110 countries. In October, the German Federal Joint Committee (G-BA) announced the results of its benefit assessment of *Galvus* and *Eucreas*, finding that they do not provide an additional benefit relative to sulphonylureas in combination with metformin. This decision is not consistent with the views of other Health Technology Assessment bodies and is the result of the German assessment process that limited its review to specific comparators.

Exelon/*Exelon* Patch ($1.0 billion, 0% cc) had stable combined sales in 2013 as a therapy for Alzheimer's disease (AD) dementia and Parkinson's disease (PD) dementia. *Exelon* Patch, the novel transdermal form of the medicine launched in 2007 and now available in more than 90 countries worldwide, generated the majority of the sales. In June 2013, the US FDA expanded the approved indication for *Exelon* Patch, which was already approved for the treatment of mild to-moderate dementia of the Alzheimer's type and mild to-moderate dementia associated with PD, to include the treatment of patients with severe AD. The severe AD indication has subsequently been approved in Argentina (Sep. 2013) and Chile (Oct. 2013). In January 2013, European marketing authorization was obtained for the higher dose in mild-to-moderate AD. The first generic versions of *Exelon* Patch have been launched in the EU.

Exjade ($893 million, +4% cc), a once-daily oral therapy for the treatment of chronic iron overload due to blood transfusions in patients two years of age and older, saw steady sales growth in the US, Europe, Latin America, China, Middle East and Japan. *Exjade* was first approved in 2005 and is now approved in more than 100 countries. *Exjade* is also approved for the treatment of chronic iron overload in patients 10 years of age and older with non-transfusion-dependent thalassemia in more than 60 countries, including the US and the member states of the EU.

Neoral/*Sandimmun* ($750 million, −4% cc), a micro-emulsion formulation of cyclosporine is an immunosuppressant to prevent organ rejection following a kidney, liver or heart transplant. *Neoral* is also approved for use in lung transplant in many countries outside of the US. Additionally, it is indicated for treating selected autoimmune disorders such as psoriasis and rheumatoid arthritis. First launched in 1995, *Neoral* is marketed in approximately 100 countries. This product is subject to generic competition.

Voltaren/*Cataflam* ($675 million, −4% cc), is a leading non-steroidal anti-inflammatory drug (NSAID) for the relief of symptoms in rheumatic diseases such as rheumatoid arthritis and osteoarthritis, and for various other inflammatory and pain conditions. *Voltaren*/*Cataflam* was first launched in 1973 and is available in more than 140 countries. This product, which is subject to generic competition, is marketed by the Pharmaceuticals Division in a wide variety of dosage forms, including tablets, drops, suppositories, ampoules and topical therapy. In addition, in various countries, our Sandoz Division markets generic versions of *Voltaren*, our Alcon Division markets *Voltaren* for ophthalmic indications, and our OTC Division markets low-dose oral forms and the topical therapy of *Voltaren* as over-the-counter products.

Total sales across all divisions of *Voltaren*/*Cataflam* (diclofenac) amounted to $1.5 billion in 2013 and grew 7% in constant currencies against the prior year.

Myfortic ($637 million, +13% cc), a transplantation medicine, continued to grow as a treatment for the prevention of acute rejection of kidney allografts. It is indicated for treatment in combination with cyclosporine and corticosteroids, and approved in more than 90 countries.

Xolair ($613 million, +24% cc), a biologic drug for appropriate patients with severe persistent allergic asthma in Europe and moderate-to-severe persistent allergic asthma in the US, is now approved in more than 90 countries and in 2013 continued to grow strongly in Europe, Japan, Canada and Latin America. Novartis co-promotes *Xolair* with Genentech/Roche in the US and shares a portion of operating income, but does not book US sales. A Phase III trial is progressing to support registration in China. Results from three pivotal Phase III registration studies for omalizumab, the active ingredient in *Xolair*, for the treatment of chronic spontaneous urticaria (CSU) were presented in 2013. CSU is also known as chronic idiopathic urticaria (CIU) in the US, and is a persistent, debilitating form of hives and chronic itch with limited approved treatment options. Regulatory submissions for omalizumab in CSU were completed in the EU, US and Switzerland in the third quarter of 2013. In January 2014, the CHMP granted a positive opinion for the use of *Xolair* as an add-on therapy for CSU in adult and adolescent patients 12 years and older with inadequate response to H1 antihistamines. The opinion was based on positive results from the three pivotal registration studies.

Zometa ($600 million, −52% cc), which is used in an oncology setting to reduce or delay skeletal-related events in patients with bone metastases from solid tumors and multiple myeloma, continued to decline as anticipated in 2013 due to competition and generic challenges following patent expirations in 2013 on its active ingredient, zoledronic acid.

Ritalin/*Focalin* ($594 million, +8% cc) continued to grow as a treatment for attention deficit hyperactivity disorder (ADHD) in children. *Ritalin* and *Ritalin LA* are available in more than 70 and 30 countries, respectively, and are also indicated for narcolepsy. *Focalin* and *Focalin XR* are available in the US and *Focalin XR* is additionally indicated for adults. *Focalin XR* is also approved in Switzerland. *Ritalin* Immediate Release has generic competition in most countries. Some strengths of *Ritalin* and *Focalin* are subject to generic competition in the US.

Comtan/*Stalevo* ($401 million, −21% cc), both indicated for the treatment of patients with Parkinson's disease who experience end-of-dose motor (or movement) fluctuations, known as "wearing off", saw sales decline in 2013 due to generic competition in some markets. *Comtan* (entacapone) and *Stalevo* (carbidopa, levodopa and entacapone) are marketed in more than 50 countries by Novartis under a licensing agreement with Orion Corporation.

TOBI/*TOBI Podhaler* ($387 million, +22% cc). Sales of both *TOBI* (tobramycin inhalation solution) and *TOBI Podhaler* (tobramycin inhalation powder) formulations of the antibiotic tobramycin, continued to grow, in particular following the approval of *TOBI Podhaler* in the US in March 2013, with *TOBI Podhaler* representing 33% of total sales in 2013. Both products are used for the management of pulmonary Pseudomonas aeruginosa infection in cystic fibrosis patients aged six years and older. *TOBI Podhaler*, now approved in over 55 countries, delivers tobramycin using a portable, pocket-sized inhaler and reduces administration time by approximately 70% relative to *TOBI*.

Femara ($384 million, −7% cc), a treatment for early stage and advanced breast cancer in postmenopausal women, experienced a continued decline in sales due to multiple generic entries in the US, Europe and other key markets.

Other Products of Significance

Reclast/*Aclasta* ($337 million, −42% cc), is the first once-yearly bisphosphonate infusion for the treatment of certain forms of osteoporosis in both men and women. *Reclast*/*Aclasta* is also indicated for the treatment of Paget's disease of the bone in men and women. Sold as *Reclast* in the US and *Aclasta* in the rest of the world, the product is approved in more than 100 countries for up to six indications. It is also the only bisphosphonate approved to reduce the incidence of fractures at all three key fracture sites (hip, spine and non-spine) in the treatment of postmenopausal osteoporosis. Zoledronic acid, the active ingredient in *Reclast*/*Aclasta*, is also approved in a number of countries in a different dosage under the trade name *Zometa* for certain oncology indications. *Reclast*/*Aclasta* is facing generic competition in 2013 since the patent on its active ingredient, zoledronic acid, expired in the US and other major markets.

Zortress/*Certican* ($249 million, +20% cc), is a transplantation medicine approved in more than 90 countries to prevent organ rejection for renal and heart transplant patients, and in addition, in more than 50 countries worldwide to prevent organ rejection for liver transplant patients. In the US, under the trade name *Zortress*, the drug is approved for the prophylaxis of organ rejection in adult patients at low-moderate immunologic risk receiving a kidney transplant, as well as for the prophylaxis of allograft rejection in adult liver transplant recipients. Everolimus, the active ingredient in *Zortress*/*Certican,* is marketed for other indications under the trade names *Afinitor*/*Votubia.* Everolimus is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Arcapta Neohaler/*Onbrez Breezhaler* ($192 million, +47% cc) continued to grow strongly worldwide as a once-daily long-acting $beta_2$-agonist (LABA) for the maintenance bronchodilator treatment of airflow obstruction in adult patients with chronic obstructive pulmonary disease (COPD). Indacaterol, the active ingredient in *Arcapta Neohaler*/*Onbrez Breezhaler*, is now approved in more than 100 countries.

Jakavi ($163 million) sales grew as an oral inhibitor of the JAK 1 and JAK 2 tyrosine kinases. It is the first JAK inhibitor indicated for the treatment of disease-related splenomegaly or symptoms in adult patients with primary myelofibrosis (also known as chronic idiopathic myelofibrosis), post-polycythemia vera myelofibrosis or post-essential thrombocythemia myelofibrosis. *Jakavi* is approved in more than 50 countries, including EU member states, Canada, Australia, Russia, Mexico and Argentina; with additional worldwide regulatory filings underway. Incyte Corporation holds the rights for *Jakavi* in the US, where it is sold as Jakafi®. Trials, including a Phase III registration study, are underway examining the use of *Jakavi* in patients with polycythemia vera, with data expected to be presented at medical congresses and filed with health authorities in 2014.

Extavia ($159 million, −1% cc), the Novartis version of Betaferon®/Betaseron® (interferon beta-1b) for relapsing forms of MS is available in more than 35 countries, including the US. A new auto-injector device, *EXTAVIPro 30G*, was launched in October 2013 for self-injection of *Extavia*. The auto injector is an enhanced version of the *EXTAVIJECT 30G* and has been designed for greater convenience and patient comfort.

Ilaris ($119 million, +65% cc), is a fully human monoclonal antibody that selectively binds and neutralizes interleukin-1β, a pro-inflammatory cytokine. Since 2009, *Ilaris* has been approved in over 60 countries for the treatment of children and adults suffering from cryopyrin associated periodic syndrome (CAPS), a group of rare disorders characterized by chronic recurrent fever, urticaria, occasional arthritis, deafness, and potentially life-threatening amyloidosis. In March 2013, *Ilaris* was approved in the EU for the treatment of acute gouty arthritis in patients who cannot be managed with the standard of care. Also in 2013, *Ilaris* was approved for the treatment of systemic juvenile idiopathic arthritis in the US, EU and other countries, and it was granted a CAPS label extension in the EU for use in younger children.

Seebri Breezhaler ($58 million) saw strong growth and is now approved in the EU, Japan, Switzerland, Canada, Australia and a number of other countries. *Seebri Breezhaler* (glycopyrronium bromide) is a novel inhaled long-acting muscarinic antagonist (LAMA) indicated as a once-daily maintenance bronchodilator treatment to relieve symptoms in patients with COPD. Glycopyrronium bromide was exclusively licensed to Novartis in April 2005 by Vectura and its co-development partner Sosei.

Ultibro Breezhaler ($6 million), is a once-daily fixed-dose combination of the LABA indacaterol and the LAMA glycopyrronium bromide. In September 2013, *Ultibro Breezhaler* was approved in the EU as a maintenance bronchodilator treatment to relieve symptoms in adult patients with COPD, and in Japan the Ministry of Health Labour and Welfare approved *Ultibro* Inhalation Capsules, delivered through the *Breezhaler* inhalation device, for relief of various symptoms due to airway obstruction in COPD. *Ultibro Breezhaler* was also approved in Canada in 2013 as a long-term once-daily maintenance bronchodilator treatment of airflow obstruction in patients with COPD, including chronic bronchitis and emphysema. Glycopyrronium bromide was exclusively licensed to Novartis in April 2005 by Vectura and its co-development partner Sosei.

Alcon

Alcon net sales were $10.5 billion (+3%, +5% cc) for the full year 2013. The Surgical franchise grew 4% (+7% cc), driven by procedure growth, market share gains, and demand for *LenSx* and *Centurion* equipment. Ophthalmic Pharmaceuticals growth (+2%, +5% cc) was due to broad market share gains across key segments, but was impacted by generic competition in the US glaucoma market. Vision Care grew 2% (+4% cc), as sales growth in the contact lens business was partly offset by declines in the contact lens care market.

Alcon Division net sales by product category:

	Year ended Dec 31, 2013	Year ended Dec 31, 2012	Change in $	Constant currencies change
	$ m	$ m	%	%
Surgical				
Cataract products	3,037	2,932	4	7
of which IOLs	*1,297*	*1,281*	*1*	*5*
Vitreoretinal products	592	578	2	7
Refractive/other	268	242	11	12
Total	**3,897**	**3,752**	**4**	**7**
Ophthalmic Pharmaceuticals				
Glaucoma	1,265	1,259	0	4
Allergy/otic/nasal	939	901	4	6
Infection/inflammation	1,019	1,011	1	2
Dry eye/other	885	848	4	7
Total	**4,108**	**4,019**	**2**	**5**
Vision Care				
Contact lenses	1,793	1,732	4	5
Contact lens care	698	722	(3)	(1)
Total	**2,491**	**2,454**	**2**	**4**
Total net sales	**10,496**	**10,225**	**3**	**5**

Alcon Division Highlights

Net sales growth data below refer to 2013 worldwide performance.

Surgical

Surgical was the Alcon Division's fastest-growing franchise in 2013, with global net sales of $3.9 billion up 7% (cc) over the previous year. This performance was driven by growth in the installed equipment base, including *LenSx* and the recently launched *Centurion* equipment, as well as cataract procedure growth and share gains in intraocular lenses (IOLs).

Global sales of the *LenSx* femtosecond laser grew 30% (cc), with increasing use of disposable products for the platform, as well as disposables for Constellation, which grew 34% (cc).

In addition, Alcon launched the *Centurion* vision system, its latest phacoemulsification platform, in the US and Europe, as part of the Cataract Refractive Suite, which is comprised of multiple innovations and advanced technologies from its surgical device portfolio, including the Verion image guided system and *LuxOR* surgical microscopes in addition to the *LenSx* laser and *Centurion* vision system.

Sales of base IOLs increased by 6% (cc), growing ahead of the market. Advanced technology intraocular lenses (ATIOLs) (+4% cc) were driven primarily by the continued penetration of toric ATIOLs, partially offset by price erosion.

Ophthalmic Pharmaceuticals

Ophthalmic Pharmaceuticals global net sales were $4.1 billion (+5% cc) in 2013, driven by broad market share gains across key segments.

Within Glaucoma, the positive US response to the April 2013 launch of *Simbrinza* ophthamlic suspension, overall pricing discipline, and continued non-US growth (+5% cc), driven by fixed-dose combinations *DuoTrav* solution and *Azarga* suspension, were partially offset by US generic prostaglandin competition. US sales of *Travatan* (−5% cc) declined due to prostaglandin generic competition.

Allergy/otic/nasal sales were up 4% in $ (+6% cc) driven by *Nevanac* suspension (+13% cc) and Dry Eye continued to show global growth within the *Systane* product family (+17% cc).

Market access for *Jetrea* intravitreal injection, a first-in-class treatment for symptomatic vitreomacular adhesion and vitreomacular traction when associated with macular hole, continued to make significant progress. In 2013, it was launched in Germany, Benelux, the Nordics, Canada, and the UK. In the UK, the National Institute for Health and Care Excellence (NICE) confirmed its positive recommendation for reimbursement to the NHS with final written guidance received in October 2013. In Germany, the Institute for Quality and Efficiency in Health Care (IQWiG) assessed the additional benefit of *Jetrea* intravitreal injection versus standard of care as "major" for patients with mild symptoms and "significant" for patients with moderate to severe symptoms. Additionally, in January 2014, Canada's Common Drug Review issued a positive recommendation.

Vision Care

Vision Care global product net sales were $2.5 billion (+4% cc), with solid sales in contact lenses (+5% cc), offset by a slight decline in sales of contact lens care products (−1% cc). Contact lens segment performance was driven by the continued strong global growth of the *Air Optix* portfolio (+12% cc), which leads the market in the multifocal segment. The *Dailies* brand experienced continued growth in the US and Europe due to the positive market response to the launch of *Dailies Total1* water gradient contact lenses. In 2013, the product was introduced in the US, Canada, Switzerland, the UK, Spain and Portugal, while also receiving approval in China. Alcon also received FDA approval for its *Dailies Aqua Comfort Plus* Toric silicone hydrogel lenses. Performance of contact lens care products was mixed, driven by strength in *Clear Care*, offset by declines in non-promoted chemical disinfectant brands and softness in *Opti-Free* products.

Sandoz

Net sales increased by 5% (+5% cc) to $9.2 billion, driven by double-digit retail generics and biosimilars sales increases in Western Europe (excluding Germany) (+12% cc), Central & Eastern Europe (+11% cc), the Middle East & Africa (+19% cc), Latin America (+16% cc) and Asia (excluding Japan) (+13% cc). Japan (+19% cc) grew double digit for the 6th year in a row. The US was up 2% (cc) in a flat generics market, as new product launches and the acquisition of Fougera more than compensated for the decline in sales of enoxaparin (generic Lovenox®) (which fell from $451 million in 2012 to $213 million in 2013) and the US authorized generic launch of the valsartan HCT in 2012. German retail generics and biosimilars sales declined by 1% (cc) in a declining market. Biosimilars sales grew 23% (cc) to reach $420 million globally.

Volume increased 14 percentage points, including 3 percentage points contributed by Fougera. Price erosion was 9 percentage points, driven primarily by higher pricing for enoxaparin in the first half of 2012.

Discontinuing Operations

Vaccines and Diagnostics

Net sales increased 7% (+6% cc) to $2.0 billion for the full year compared to $1.9 billion in 2012. The sales increase was driven by higher *Menveo* sales and seasonal influenza demand and pre-pandemic sales.

Key progress was achieved this year with the approval of *Menveo* for infants as young as 2 months of age in the US as well as the approval of *Bexsero* in Europe, Australia and Canada, with shipments to several European private markets starting in the fourth quarter. Additionally, we supplied *Bexsero* to Princeton University in response to a potentially deadly outbreak of meningococcal serogroup B disease.

Consumer Health

Consumer Health returned to growth in 2013 as sales increased 9% (+10% cc) to $4.1 billion, driven by both the OTC and Animal Health businesses.

OTC sales grew double-digit (cc) versus the prior-year period, mainly due to product re-launches in the US and Canada, new product launches globally, the ability to increase price behind strong brands, and a focus on priority brands around the world. Double-digit sales growth (cc) continued in Emerging Growth Markets, particularly in China, Poland and Russia. Russia became OTC's biggest growth driver and second-largest market this year. *Voltaren* became the world's tenth-largest OTC brand in 2013, delivering double-digit sales growth (cc) supported by continued success of the extra-strength and extended-relief (12 hours) topical formulation, now available in 21 countries. *Theraflu* and *Otrivin* also achieved double-digit growth, supported by a strong cough/cold season in Russia and Poland. *Excedrin* continued to regain momentum following US re-launches in the fourth quarter of 2012 and the first quarter of 2013.

Animal Health delivered high single-digit growth (cc) over the prior-year period, driven by the *Sentinel* re-launch in the US market in the beginning of the second quarter. In Europe, after adjusting for the impact of a minor divestment in 2012, the business grew at a high single-digit rate, led by strong sales of *Milbemax*. *Denagard*, an anti-infective for pigs and poultry, continued to drive growth across several markets with particularly strong results in Southeast Asia. Emerging Growth Markets delivered high single-digit growth (cc), led by Russia, India and Vietnam.

Operating Income by Segment

The following table provides an overview of operating income by segment:

	Year ended Dec 31, 2013	% of net sales	Year ended Dec 31, 2012	% of net sales	Change in $	Change in constant currencies
	$ m		$ m		%	%
Pharmaceuticals	**9,376**	**29.1**	**9,598**	**29.9**	**(2)**	**3**
Alcon	**1,232**	**11.7**	**1,465**	**14.3**	**(16)**	**(2)**
Sandoz	**1,028**	**11.2**	**1,091**	**12.5**	**(6)**	**(3)**
Corporate continuing Operations	(653)		(647)		(1)	(1)
Continuing Operations	**10,983**	**21.2**	**11,507**	**22.5**	**(5)**	**2**
Discontinuing Operations[1]	(73)	(1.2)	(314)	(5.6)	77	83
Group Operating income	**10,910**	**18.8**	**11,193**	**19.8**	**(3)**	**5**

nm = not meaningful

(1) Discontinuing operations are explained in more detail, see "—Factors affecting comparability of year-on-year results of operations" and "Item 18. Financial Statements—Notes 3 and 30".

The following table provides an overview of core operating income by segment:

	Year ended Dec 31, 2013[1]	% of net sales	Year ended Dec 31, 2012[1]	% of net sales	Change in $	Change in constant currencies
	$ m		$ m		%	%
Pharmaceuticals	**9,523**	**29.6**	**10,213**	**31.8**	**(7)**	**(1)**
Alcon	**3,694**	**35.2**	**3,698**	**36.2**	**0**	**6**
Sandoz	**1,541**	**16.8**	**1,503**	**17.3**	**3**	**4**
Corporate continuing operations	(551)		(544)		(1)	0
Continuing operations	**14,207**	**27.4**	**14,870**	**29.1**	**(4)**	**1**
Discontinuing operations	278	4.6	(28)	(0.5)	nm	nm
Group core operating income	**14,485**	**25.0**	**14,842**	**26.2**	**(2)**	**3**

(1) Core operating income for both 2013 and 2012 include the divested blood transfusion diagnostics unit. For information about the impact of this on the core results, see "—Non-IFRS Measures as defined by Novartis—2013 Reconciliation of Group IFRS and core Results excluding Blood Transfusion Diagnostics Unit and—2012 Reconciliation of Group IFRS and core Results excluding Blood Transfusion Diagnostics Unit".

Continuing Operations

Total operating income from continuing operations of $11.0 billion in 2013 decreased 5% (+2% cc) compared to $11.5 billion in the prior year.

Total core operating income from continuing operations of $14.2 billion in 2013 decreased 4% (+1% cc) compared to $14.9 billion in the prior year.

Pharmaceuticals

Operating income was $9.4 billion (−2%, +3% cc) for the full year. Operating income margin in constant currencies increased by 0.1 percentage points, and currency had a negative impact of 0.9 percentage points, resulting in a net decline of 0.8 percentage points to 29.1% of net sales. Adjustments to arrive at core operating income amounted to $147 million, mainly due to the amortization of intangible assets of $278 million and impairment charges of $74 million, partially offset by gains from divesting products and financial assets of $313 million. Prior-year adjustments of $615 million included $322 million for the amortization of intangible assets, $238 million of impairments and $55 million of other exceptional charges.

Core operating income declined 7% (−1% cc) to $9.5 billion. Core operating income margin in constant currencies declined by 1.3 percentage points, mainly due to increased investments into promising R&D pipeline assets and lower gross margins, partly offset by productivity savings from Marketing & Sales. Currency had a negative impact of 0.9 percentage points, resulting in a net decrease of 2.2 percentage points to 29.6% of net sales.

Core gross margin declined by 0.7 percentage points (cc) mainly due to the impact of increased royalties, principally for *Gilenya* and generic erosion. R&D expenses as a percentage of net sales increased by 0.9 percentage points (cc) to support key projects. Marketing & Sales and General & Administration expenses improved margin by 0.4 percentage points (cc). Other Income and Expense, net reduced the margin by 0.1 percentage points (cc).

As shown below, Pharmaceuticals invested $7.2 billion (on a core basis also $7.2 billion) in research and development in 2013. Total Research and Development expenses of the Pharmaceuticals Division in 2013 represents 22.5% of Pharmaceuticals net sales compared to 21.5% in 2012.

Research and Exploratory Development expenditure was $2.7 billion in 2013, practically unchanged from 2012. Confirmatory Development expenditures in 2013 increased by 6% to $4.6 billion as compared against 2012.

Pharmaceuticals research and development expenditure

	2013	Core R&D 2013[1]	2012	Core R&D 2012[1]
	$ m	$ m	$ m	$ m
Research and Exploratory Development	2,664	2,611	2,584	2,530
Confirmatory Development	4,578	4,550	4,334	4,167
Total	**7,242**	**7,161**	**6,918**	**6,697**
% of Pharmaceuticals net sales	22.5%	22.2%	21.5%	20.8%

(1) Core excludes impairments, amortization and certain exceptional items.

Alcon

Operating income of $1.2 billion (−16%,−2% cc) was impacted by integration and restructuring charges, partially offset by sales growth and productivity gains. Operating income margin in constant currencies decreased by 1.0 percentage point, and currency had a negative impact of 1.6 percentage points, resulting in a net decline of 2.6 percentage points to 11.7% of net sales. Adjustments to arrive at core operating income amounted to $2.5 billion, consisting of $2.0 billion for the amortization of intangible assets, $330 million of acquisition-related items, $61 million for the impairment of intangible assets and property, plant and equipment, $18 million for a net increase in contingent consideration, and $64 million of other costs. Prior-year adjustments of $2.2 billion included $1.9 billion of intangible asset amortization and $0.3 billion of acquisition-related items.

Core operating income was in line with prior year in reported terms, but up 6% in constant currencies. Core operating income margin in constant currencies increased by 0.1 percentage points; currency had a negative impact of 1.1 percentage points, resulting in a net decrease of 1.0 percentage points to 35.2% of net sales.

Core gross margin declined by 1.0 percentage point (cc), mainly due to product mix as Alcon refreshes and expands its surgical equipment install base. Marketing & Sales expenses as a percentage of net sales decreased by 0.8 percentage points (cc) compared to 2012, driven by synergies and productivity improvements, partially offset by investments in new launches. General & Administration expenses increased by 0.4 percentage points (cc), while R&D expenses decreased by 0.6 percentage points (cc). Other Income and Expense, net increased margin by 0.1 percentage points (cc).

Sandoz

Operating income decreased by 6% (−3% cc) to $1.0 billion. The operating income margin in constant currencies decreased by 1.0 percentage point; currency had a negative impact of 0.3 percentage points, resulting in a net decrease of 1.3 percentage points to 11.2% of net sales, driven by $85 million of legal provisions and the prior-year US authorized generic launch of valsartan HCT. Adjustments to arrive at core operating income amounted to a net expense of $513 million, mainly driven by $409 million for the amortization of intangible assets, as well as $85 million for legal provisions and $20 million for impairments of intangible assets. Prior-year adjustments of $412 million included $364 million of intangible asset amortization and $62 million of acquisition-related items.

Core operating income grew by 3% (+4% cc) to $1.5 billion. The difference between reported and core operating income growth was driven by higher exceptional items, particularly the aforementioned

$85 million for legal provisions, compared to the previous year. Core operating income margin in constant currencies decreased by 0.1 percentage points; currency had a negative impact of 0.4 percentage points, resulting in a net decrease of 0.5 percentage points to 16.8% of net sales.

Core gross margin decreased by 1.0 percentage points (cc) as a result of the very high-margin US authorized generic sales of valsartan HCT in the prior year. Marketing & Sales expenses as a percentage of net sales increased by 0.4 percentage points (cc), driven by investments into strongly growing businesses in emerging markets. R&D expenses decreased by 0.1 percentage points (cc) as overall investments grew slower than sales, despite the continued ramp-up of investments into biosimilars and respiratory pipeline products. General & Administration expenses increased by 0.1 percentage points (cc). Other Income and Expense, net improved margin by 1.3 percentage points (cc) due to lower litigation costs and legal settlements in 2013 and restructuring costs in the prior year.

Corporate Income and Expense, Net

Corporate income and expense of continuing operations amounted to a net expense of $653 million compared to $647 million in the prior-year period. Total adjustments of $102 million in 2013 and $103 million in 2012 were mainly related to finance and IT transformation costs, which were partly offset by the release of Corporate provisions of $75 million in 2013 and in 2012 by the exceptional gain of $51 million from the sale of financial assets.

Discontinuing Operations

Total operating loss from discontinuing operations of $73 million in 2013 decreased 77% (+83% cc) compared to a loss of $314 million in the prior year.

Total core operating income from discontinuing operations amounted for $278 million in 2013 compared to a loss of $28 million in the prior year.

Vaccines and Diagnostics

Operating loss was $238 million, $114 million less than the $352 million operating loss in 2012. Adjustments to arrive at core operating loss amounted to $230 million, including $222 million for the amortization of intangible assets. This compares to adjustments of $175 million in 2012, which benefited from an exceptional licensing settlement of $56 million.

Core operating loss was $8 million compared to a loss of $177 million for the prior period. This improvement was mainly driven by the impact of strong sales.

Consumer Health

Consumer Health, which is continuing to recover from supply disruption in 2012, reported operating income of $178 million compared to $48 million in the prior-year period, driven by gross margin from incremental sales and higher income from minor divestments, partially offset by commercial investment behind re-launches and Lincoln restructuring expenses in the first quarter of 2013. Operating income margin in constant currencies increased by 3.4 percentage points, and currency had a negative impact of 0.3 percentage points, resulting in a margin of 4.4% of net sales. Adjustments to arrive at core operating income for the year amounted to $120 million, consisting mainly of the amortization and impairment of intangible assets and Lincoln restructuring costs. Prior-year adjustments amounted to $111 million.

Core operating income increased 87% (+95% cc) to $298 million. Core operating income margin in constant currencies increased 3.4 percentage points; currency had a negative impact of 0.4 percentage points, resulting in a net increase of 3.0 percentage points to 7.3% of net sales.

Lower costs to upgrade quality at the Lincoln facility and higher revenues generated a core gross margin increase of 2.8 percentage points (cc). Marketing & Sales expenses as a percentage of net sales increased by 0.1 percentage points (cc) behind investments to support the re-launch of products as well as investments into key brands and Emerging Growth Markets. R&D expenses decreased by 0.4 percentage points (cc), and General & Administration expenses increased by 0.5 percentage points (cc). Other Income and Expense, net increased core operating income margin by 0.8 percentage points (cc).

Corporate Income and Expense, Net

Corporate income and expense of discontinuing operations amounted to a net expense of $13 million compared to $10 million in the prior-year period. In order to arrive at core corporate income and expense, net in 2013 there was a reduction in expense of $1 million and no adjustment in 2012.

Non-operating Income and Expense

	Year ended Dec 31, 2013	Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Group operating income	**10,910**	**11,193**	**(3)**	**5**
Income from associated companies	600	552	9	9
Interest expense	(683)	(724)	6	6
Other financial income and expense	(92)	(96)	4	30
Group income before taxes	**10,735**	**10,925**	**(2)**	**6**
Taxes	(1,443)	(1,542)	6	(1)
Group net income	**9,292**	**9,383**	**(1)**	**7**
Attributable to:				
Shareholders of Novartis AG	*9,175*	*9,270*	*(1)*	*7*
Non-controlling interests	*117*	*113*	*4*	*4*
Basic EPS ($)	**3.76**	**3.83**	**(2)**	**6**

Core Non-operating Income and Expense

	Year ended Dec 31, 2013	Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Group core operating income	**14,485**	**14,842**	**(2)**	**3**
Income from associated companies	877	755	16	16
Interest expense	(683)	(724)	6	6
Other financial income and expense	(48)	(96)	50	30
Group core income before taxes	**14,631**	**14,777**	**(1)**	**4**
Taxes	(2,098)	(2,201)	5	0
Group core net income	**12,533**	**12,576**	**0**	**5**
Attributable to:				
Shareholders of Novartis AG	*12,416*	*12,463*	*0*	*5*
Non-controlling interests	*117*	*113*	*4*	*4*
Core basic EPS ($)	**5.09**	**5.15**	**(1)**	**4**

INCOME FROM ASSOCIATED COMPANIES

The income from associated companies increased from $552 million in 2012 to $600 million in 2013. The increase was primarily due to an estimated higher net result of Roche AG.

The following is a summary of the individual components included in the income from associated companies:

	2013	2012
	$ m	$ m
Novartis share of Roche's estimated current-year consolidated net income	817	709
Prior-year adjustment	(59)	(18)
Amortization of additional intangible assets recognized by Novartis on initial accounting for the equity interest	(154)	(153)
Net income effect from Roche	**604**	**538**
Net (loss)/income from other associated companies	**(4)**	**14**
Income from associated companies	**600**	**552**

The Group's 33.3% interest in Roche's voting shares, which represents a 6.3% interest in Roche's total equity, generated income of $604 million in 2013, up from $538 million in 2012. The 2013 contribution reflects an estimated $817 million share of Roche's net income in 2013. This contribution, however, was reduced by a prior year adjustment of $59 million based on the Roche 2012 results published after the 2012 Novartis consolidated financial statements and $154 million for the amortization of intangible assets arising from the allocation to intangible assets of the purchase price paid by Novartis for this investment in Roche. A survey of analyst estimates is used to estimate the Group's share of net income in Roche. Any differences between these estimates and actual results will be adjusted in the 2014 consolidated financial statements.

Adjusting for the exceptional items in both years, core income from associated companies increased 16% from $755 million to $877 million.

Interest Expense and other financial income/expense

Interest expense decreased to $683 million in 2013 from $724 million in 2012. Slightly higher interest expenses were more than offset by lower charges from the unwinding of discounted liabilities. Other financial income and expense amounted to a net expense of $92 million compared to $96 million in 2012 mainly due to lower currency losses.

Taxes

The tax rate (taxes as percentage of pre-tax income) decreased to 13.4% in 2013 from 14.1% in 2012 due to lower profit before tax in higher tax jurisdictions.

The core tax rate (taxes as a percentage of core pre-tax income) was 14.3% in 2013, down from 14.9% in 2012.

For further information on the main elements contributing to the difference, see "—Core Results" below and "Item 18. Financial Statements—Note 6".

FACTORS AFFECTING COMPARABILITY OF YEAR-ON-YEAR RESULTS OF OPERATIONS

Recent Significant Transactions

The comparability of the year-on-year results of our operations for the total Group can be significantly affected by acquisitions and divestments. The transactions of significance during 2012 and 2014 are mentioned below. There were no significant acquisition or divestment transactions in 2013.

Acquisitions and Divestments in 2014

Vaccines — Divestment of blood transfusion diagnostics unit

On January 9, 2014, Novartis completed the divestment of its blood transfusion diagnostics unit to the Spanish company Grifols S.A., for $1.7 billion in cash. The pre-tax gain on this transaction was approximately $0.9 billion and was recorded in operating income from discontinuing operations.

Pharmaceuticals — Acquisition of CoStim Pharmaceuticals Inc.

On February 17, 2014, Novartis acquired all of the outstanding shares of CoStim Pharmaceuticals Inc., a Cambridge, Massachusetts, US-based, privately held biotechnology company focused on harnessing the immune system to eliminate immune-blocking signals from cancer, for a total purchase consideration of $248 million (excluding cash acquired). This amount consists of an initial cash payment and the net present value of contingent consideration of $153 million due to previous CoStim shareholders, which they are eligible to receive upon the achievement of specified development and commercialization milestones. The purchase price allocation resulted in net identified assets of $152 million (excluding cash acquired) and goodwill of $96 million. Results of operations since the acquisition were not material.

Pharmaceuticals — Divestment of Idenix Pharmaceuticals, Inc. (Idenix) Shareholding

On August 5, 2014, Merck & Co., USA completed a tender offer for Idenix. As a result, Novartis divested its 22% shareholding in Idenix and realized a gain of approximately $0.8 billion which was recorded in income from associated companies.

Corporate — Divestment of LTS Lohmann Therapie-Systeme AG (LTS) Shareholding

On November 5, 2014, Novartis divested its 43% shareholding in LTS and realized a gain of approximately $0.4 billion which was recorded in income from associated companies.

Alcon — Acquisition of WaveTec Vision Systems, Inc. (WaveTec)

On October 16, 2014, Alcon acquired all of the outstanding shares of WaveTec, a privately held company, for $350 million in cash. The purchase price allocation resulted in net identified assets of $180 million and goodwill of $170 million. Results of operations since the acquisition were not material.

Acquisitions in 2012

Sandoz—Acquisition of Fougera Pharmaceuticals, Inc.

On July 20, 2012, Sandoz completed the acquisition of 100% of Fougera Pharmaceuticals, Inc. a specialty dermatology generics company based in Melville, New York, for $1.5 billion in cash. Sandoz acquired Fougera for its strong dermatology development and manufacturing expertise. Fougera employed approximately 700 people.

The final purchase price allocation resulted in net identified assets of $0.6 billion (excluding acquired cash) and goodwill of $0.9 billion being recognized.

Major Pending Transactions

Transaction with Eli Lilly and Company

On April 22, 2014, Novartis entered into an agreement with Eli Lilly and Company, USA (Lilly) to divest its Animal Health business to Lilly for approximately $5.4 billion in cash to be paid on closing. This transaction closed on January 1, 2015 and will result in a pre-tax gain of approximately $4.6 billion.

Transactions with GlaxoSmithKline PLC

On April 22, 2014 (and as amended and restated on May 29, 2014), Novartis entered into the following agreements with GlaxoSmithKline plc, Great Britain (GSK). These transactions with GSK are inter-conditional and were approved by GSK shareholders in December 2014. They are still subject to other closing conditions, including regulatory approvals. The transactions are expected to close during the first half of 2015.

Pharmaceuticals — Acquisition of GSK oncology products

Novartis has agreed to acquire GSK's oncology products for an aggregate cash consideration of $16 billion. Up to $1.5 billion of this cash consideration is contingent on certain development milestones. In addition, under the terms of the agreement, Novartis was granted a right of first negotiation over the co-development or commercialization of GSK's current and future oncology R&D pipeline, excluding oncology vaccines. The right of first negotiation is for a period of 12.5 years from the acquisition closing date.

Vaccines — Divestment

Novartis has agreed to divest its Vaccines business to GSK for up to $7.1 billion, plus royalties. The $7.1 billion consists of $5.25 billion to be paid on closing and up to $1.8 billion in future milestone payments. Novartis's Vaccines influenza business is excluded from the GSK Vaccines business acquisition. However, GSK has entered into a future option arrangement with Novartis in relation to the Vaccines influenza business, pursuant to which Novartis may unilaterally require GSK to acquire the entire or certain parts of its vaccines influenza business for consideration of up to $250 million (the Influenza Put Option) if the divestment to CSL Limited, Australia (CSL) discussed below is not completed. The option period is 18 months, beginning the earlier of the GSK transaction closing date and October 22, 2015. Novartis paid GSK a fee of $5 million in consideration for the grant of the Influenza Put Option.

Consumer Health — Combination of Novartis OTC with GSK consumer healthcare in a joint venture

Novartis and GSK have agreed to create a combined consumer healthcare business through a joint venture between Novartis OTC and GSK consumer healthcare. Upon completion, Novartis will own a 36.5% share of the joint venture and will have four of eleven seats on the joint venture's Board. Furthermore, Novartis will have customary minority rights and also exit rights at a pre-defined, market-based pricing mechanism. The investment will be accounted for using the equity method of accounting.

Transaction with CSL

On October 26, 2014 Novartis entered into a transaction with CSL to sell its Vaccines influenza business to CSL for $275 million. This transaction is expected to be completed in the second half of 2015, subject to all necessary regulatory approvals.

Entering into the separate divestment agreement with CSL resulted in the vaccines influenza business being a separate cash generating unit within the Vaccines Division, requiring the performance of a separate valuation of the influenza vaccines business' net assets. This triggered the recognition of an

exceptional impairment charge of approximately $1.1 billion (pre-tax), as the book value of the influenza vaccines business net assets was above the $275 million consideration to be paid by CSL.

Classification as discontinuing operations

These major pending transactions, combined with the divestment of the blood transfusion diagnostics unit, which closed on January 9, 2014, result from the portfolio review which commenced in mid-2013.

As a result, Novartis is required to separate the Group's reported financial data for the current and prior year into "discontinuing" and "continuing" operations.

Discontinuing operations include the Animal Health Division, the OTC Division, and the Vaccines Division, including the $0.9 billion pre-tax gain arising from the $1.7 billion divestment of the blood transfusion diagnostics unit to Grifols S.A., completed on January 9, 2014, and related prior-year results for this unit's activity. Excluded from discontinuing operations are certain intellectual property rights and related other revenues of the Vaccines Division, which are retained by Novartis and are now reported under Corporate activities. Also included in discontinuing operations, under Corporate, are certain portfolio transformation and other transaction related expenses.

As required by IFRS, 2014 results exclude from the portfolio transformation announcement date any further depreciation and amortization related to discontinuing operations.

Continuing operations comprise all other activities of the Novartis Group, including the Pharmaceuticals, Alcon and Sandoz Divisions and the retained Corporate activities.

Continuing operations do not yet include the results from oncology assets to be acquired from GSK on closing of the transaction or the results from the 36.5% interest in the GSK/Novartis consumer healthcare joint venture that will be created at the same time.

The following table provides an overview of key figures for continuing and discontinuing operations:

	Continuing operations Year ended Dec 31, 2014	Continuing operations Year ended Dec 31, 2013	Change in $	Change in constant currencies	Discontinuing operations Year ended Dec 31, 2014	Discontinuing operations Year ended Dec 31, 2013	Change in $	Change in constant currencies
	$ m	$ m	%	%	$ m	$ m	%	%
Net sales to third parties	**52,180**	**51,869**	**1**	**3**	**5,816**	**6,051**	**(4)**	**(1)**
Operating income/loss	**11,089**	**10,983**	**1**	**7**	**(353)**	**(73)**	**nm**	**nm**
Return on net sales (%)	21.3	21.2			(6.1)	(1.2)		
Core operating income/loss	**14,473**	**14,207**	**2**	**7**	**143**	**(16)**	**nm**	**nm**
Core return on net sales (%)	27.7	27.4			2.5	(0.3)		

nm = not meaningful

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our significant accounting policies are set out in Note 1 to the Group's consolidated financial statements, which are prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

Given the uncertainties inherent in our business activities, we must make certain estimates and assumptions that require difficult, subjective and complex judgments. Because of uncertainties inherent in such judgments, actual outcomes and results may differ from our assumptions and estimates, which could materially affect the Group's consolidated financial statements. Application of the following accounting policies requires certain assumptions and estimates that have the potential for the most significant impact on our consolidated financial statements.

Deductions from Revenues

As is typical in the pharmaceuticals industry, our gross sales are subject to various deductions which are composed primarily of rebates and discounts to retail customers, government agencies, wholesalers, health insurance companies and managed healthcare organizations. These deductions represent estimates of the related obligations, requiring the use of judgment when estimating the effect of these sales deductions on gross sales for a reporting period. These adjustments are deducted from gross sales to arrive at net sales.

The following summarizes the nature of some of these deductions and how the deduction is estimated. After recording these, net sales represent our best estimate of the cash that we expect to ultimately collect. The US market has the most complex arrangements related to revenue deductions.

United States specific healthcare plans and program rebates

The United States Medicaid Drug Rebate Program is administered by State governments using State and Federal funds to provide assistance to certain vulnerable and needy individuals and families. Calculating the rebates to be paid related to this Program involves interpreting relevant regulations, which are subject to challenge or change in interpretative guidance by government authorities. Provisions for estimating Medicaid rebates are calculated using a combination of historical experience, product and population growth, product price increases and the mix of contracts and specific terms in the individual State agreements. These provisions are adjusted based on established processes and experiences from filing data with individual States.

The United States Federal Medicare Program, which funds healthcare benefits to individuals age 65 or older, provides prescription drug benefits under Part D of the program. This benefit is provided through private prescription drug plans. Provisions for estimating Medicare Part D rebates are calculated based on the terms of individual plan agreements, product sales and population growth, product price increases and the mix of contracts, and are adjusted periodically.

We offer rebates to key managed healthcare plans in an effort to increase sales of our products. These rebate programs provide payors a rebate after they have demonstrated they have met all terms and conditions set forth in their contract with us. These rebates are estimated based on the terms of individual agreements, historical experience and projected product growth rates. We adjust provisions related to these rebates periodically to reflect actual experience.

There is often a time lag of several months between us recording the revenue deductions and our final accounting for them.

Non-United States specific healthcare plans and program rebates

In certain countries other than the US, we provide rebates to governments and other entities. These rebates are often mandated by laws or government regulations.

In several countries we enter into innovative pay-for-performance arrangements with certain healthcare providers, especially in Europe and Australia. Under these agreements, we may be required to make refunds to the healthcare providers or to provide additional medicines free of charge if anticipated treatment outcomes do not meet predefined targets. Potential refunds and the delivery of additional

medicines at no cost are estimated and recorded as a deduction of revenue at the time the related revenues are recorded. Estimates are based on historical experience and clinical data. In cases where historical experience and clinical data are not sufficient for a reliable estimation of the outcome, revenue recognition would be deferred until such history would be available.

There is often a time lag of several months between us recording the revenue deductions and our final accounting for them.

Non-healthcare plans and program rebates, returns and other deductions

Charge-backs occur where our subsidiaries have arrangements with indirect customers to sell products at prices that are lower than the price charged to wholesalers. A charge-back represents the difference between the invoice price to the wholesaler and the indirect customer's contract price. We account for vendor charge-backs by reducing revenue by an amount equal to our estimate of charge-backs attributable to a sale and they are generally settled within one to three months of incurring the liability. Provisions for estimated charge-backs are calculated using a combination of factors such as historical experience, product growth rates, payments, level of inventory in the distribution channel, the terms of individual agreements and our estimate of the claims processing time lag.

We offer rebates to purchasing organizations and other direct and indirect customers to sustain and increase market share for our products. Since rebates are contractually agreed upon, rebates are estimated based on the terms of the individual agreements, historical experience, and projected product growth rates.

When we sell a product providing a customer the right to return it, we record a provision for estimated sales returns based on our sales returns policy and historical rates. Other factors considered include actual product recalls, expected marketplace changes, the remaining shelf life of the product, and the expected entry of generic products. In 2014, sales returns amounted to approximately 1% of gross product sales. If sufficient experience is not available, sales are only recorded based on evidence of product consumption or when the right of return has expired.

We enter into distribution service agreements with major wholesalers, which provide a financial disincentive for the wholesalers to purchase product quantities exceeding current customer demand. Where possible, we adjust shipping patterns for our products to maintain wholesalers' inventories level consistent with underlying patient demand.

We offer cash discounts to customers to encourage prompt payment. Cash discounts are accrued at the time of invoicing and deducted from revenue.

Following a decrease in the price of a product, we generally grant customers a "shelf stock adjustment" for a customer's existing inventory for the involved product. Provisions for shelf stock adjustments, which are primarily relevant within the Sandoz Division, are determined at the time of the price decline or at the point of sale, if the impact of a price decline on the products sold can be reasonably estimated based on the customer's inventory levels of the relevant product.

Other sales discounts, such as consumer coupons and co-pay discount cards, are offered in some markets. These discounts are recorded at the time of sale, or when the coupon is issued, and are estimated utilizing historical experience and the specific terms for each program. If a discount for a probable future transaction is offered as part of a sales transaction then an appropriate portion of revenue is deferred to cover this estimated obligation.

We adjust provisions for revenue deductions periodically to reflect actual experience. To evaluate the adequacy of provision balances, we use internal and external estimates of the level of inventory in the distribution channel, actual claims data received and the time lag for processing rebate claims. Management also estimates the level of inventory of the relevant product held by retailers and in transit. External data sources include reports of wholesalers and third-party market data purchased by Novartis.

The following table shows the worldwide extent of our revenue deductions provisions and related payment experiences for the Pharmaceuticals, Alcon and Sandoz divisions:

PROVISIONS FOR REVENUE DEDUCTIONS

	Revenue deductions provisions at January 1	Effect of currency translation and business combinations	Payments/ utilizations	Income statement charge		Change in provisions offset against gross trade receivables	Revenue deductions provisions at December 31
				Adjustments of prior years	Current year		
	$ m	$ m	$ m	$ m	$ m	$ m	$ m
2014							
US specific healthcare plans and program rebates	1,376		(3,118)	(186)	3,025		1,097
Non-US specific healthcare plans and program rebates	1,145	(124)	(1,743)	(19)	1,787	(31)	1,015
Non-healthcare plans and program related rebates, returns and other deductions	1,427	(83)	(9,046)	(52)	9,564	(389)	1,421
Total continuing operations 2014	**3,948**	**(207)**	**(13,907)**	**(257)**	**14,376**	**(420)**	**3,533**
2013							
US specific healthcare plans and program rebates	1,434		(2,990)	(74)	3,006		1,376
Non-US specific healthcare plans and program rebates	942	10	(1,634)	(45)	1,935	(63)	1,145
Non-healthcare plans and program related rebates, returns and other deductions	1,444	(10)	(7,745)	(34)	7,934	(162)	1,427
Total continuing operations 2013	**3,820**	**0**	**(12,369)**	**(153)**	**12,875**	**(225)**	**3,948**
2012							
US specific healthcare plans and program rebates	1,434	16	(3,180)	(46)	3,210		1,434
Non-US specific healthcare plans and program rebates	762	14	(1,421)	74	1,513		942
Non-healthcare plans and program related rebates, returns and other deductions	1,237	174	(6,903)	(110)	7,135	(89)	1,444
Total continuing operations 2012	**3,433**	**204**	**(11,504)**	**(82)**	**11,858**	**(89)**	**3,820**

The table below shows the gross to net sales reconciliation for our Pharmaceuticals Division:

GROSS TO NET SALES RECONCILIATION

	Income statement charge			
	Charged through revenue deduction provisions	Charged directly without being recorded in revenue deduction provisions	Total	In % of gross sales
	$ m	$ m	$ m	
2014				
Pharmaceuticals gross sales subject to deductions			**39,529**	**100.0**
US specific healthcare plans and program rebates	(1,800)		(1,800)	(4.6)
Non-US specific healthcare plans and program rebates	(1,200)	(877)	(2,077)	(5.3)
Non-healthcare plans and program related rebates, returns and other deductions	(1,873)	(1,989)	(3,862)	(9.8)
Total Pharmaceuticals gross to net sales adjustments	**(4,873)**	**(2,866)**	**(7,739)**	**(19.6)**
Pharmaceuticals net sales 2014			**31,790**	**80.4**
2013				
Pharmaceuticals gross sales subject to deductions			**40,188**	**100.0**
US specific healthcare plans and program rebates	(2,125)		(2,125)	(5.3)
Non-US specific healthcare plans and program rebates	(1,368)	(802)	(2,170)	(5.4)
Non-healthcare plans and program related rebates, returns and other deductions	(1,731)	(1,948)	(3,679)	(9.2)
Total Pharmaceuticals gross to net sales adjustments	**(5,224)**	**(2,750)**	**(7,974)**	**(19.8)**
Pharmaceuticals net sales 2013			**32,214**	**80.2**
2012				
Pharmaceuticals gross sales subject to deductions			**39,912**	**100.0**
US specific healthcare plans and program rebates	(2,358)		(2,358)	(5.9)
Non-US specific healthcare plans and program rebates	(1,096)	(842)	(1,938)	(4.8)
Non-healthcare plans and program related rebates, returns and other deductions	(1,579)	(1,884)	(3,463)	(8.7)
Total Pharmaceuticals gross to net sales adjustments	**(5,033)**	**(2,726)**	**(7,759)**	**(19.4)**
Pharmaceuticals net sales 2012			**32,153**	**80.6**

Impairment of Goodwill, Intangible Assets and Property, Plant and Equipment

We review long-lived intangible assets and property, plant and equipment for impairment whenever events or changes in circumstance indicate that the asset's balance sheet carrying amount may not be

recoverable. Goodwill, the Alcon brand-name and other currently not amortized intangible assets are reviewed for impairment at least annually.

An asset is generally considered impaired when its balance sheet carrying amount exceeds its estimated recoverable amount, which is defined as the higher of its fair value less costs of disposal and its value in use. Usually, Novartis adopts the fair value less costs of disposal method for its impairment evaluation. In most cases no directly observable market inputs are available to measure the fair value less costs of disposal. Therefore an estimate of fair value less costs of disposal is derived indirectly and is based on net present value techniques utilizing post-tax cash flows and discount rates. In the limited cases where the value in use method is applied, net present value techniques are utilized using pre-tax cash flows and discount rates.

Fair value reflects estimates of assumptions that market participants would be expected to use when pricing the asset and for this purpose management considers the range of economic conditions that are expected to exist over the remaining useful life of the asset. The estimates used in calculating net present values are highly sensitive, and depend on assumptions specific to the nature of the Group's activities with regard to:

– amount and timing of projected future cash flows;

– future tax rates;

– behavior of competitors (launch of competing products, marketing initiatives, etc.); and

– appropriate discount rate.

Due to the above factors, actual cash flows and values could vary significantly from forecasted future cash flows and related values derived using discounting techniques.

The recoverable amount of a cash-generating unit and related goodwill is usually based on the fair value less costs of sale derived from applying discounted future cash flows based on the key assumptions in the following table:

	Pharmaceuticals	Alcon	Sandoz
	%	%	%
Sales growth rate assumptions after forecast period	1.25	3	0 to 2
Discount rate (post-tax)	7	7	7

In 2014, intangible asset impairment charges of $752 million were recognized. These relate to impairment charges in continuing operations of $347 million ($302 million in the Pharmaceuticals Division and $45 million in total in the Sandoz and Alcon divisions) and $405 million in discontinuing operations.

In 2013, intangible asset impairment charges in continuing operations of $108 million were recognized. These relate to impairment charges of $57 million in the Alcon Division and $51 million in total in the Sandoz and Pharmaceuticals divisions. $8 million were recognized in discontinuing operations.

Reversal of prior year impairment charges amounted to $70 million in continuing operations (2013: $2 million).

Goodwill and other intangible assets represent a significant part of our consolidated balance sheet, primarily due to acquisitions. Although no significant additional impairments are currently anticipated, impairment evaluation could lead to material impairment charges in the future. For more information, see "Item 18. Financial Statements—Note 11".

Additionally, net impairment charges for property, plant and equipment during 2014 amounted to $780 million (2013: $80 million). This relates to net impairment charges of $44 million in continuing operations and $736 million in discontinuing operations.

Trade Receivables

Trade receivables are initially recognized at their invoiced amounts including any related sales taxes less adjustments for estimated revenue deductions such as rebates, charge backs and cash discounts.

Provisions for doubtful trade receivables are established once there is an indication that it is likely that a loss will be incurred and represent the difference between the receivable value in the balance sheet and the estimated net collectible amount. Significant financial difficulties of a customer, such as probability of bankruptcy, financial reorganization, default or delinquency in payments are considered indicators that recovery of the trade receivable is doubtful. Trade receivable balances include sales to drug wholesalers, retailers, private health systems, government agencies, managed care providers, pharmacy benefit managers and government-supported healthcare systems. Novartis continues to monitor sovereign debt issues and economic conditions in Greece, Italy, Portugal, Spain and other countries, and evaluates trade receivables in these countries for potential collection risks. Substantially all of the trade receivables overdue from such countries are due directly from local governments or from government-funded entities. Deteriorating credit and economic conditions and other factors in these countries have resulted in, and may continue to result in an increase in the average length of time that it takes to collect these trade receivables and may require Novartis to re-evaluate the collectability of these trade receivables in future periods.

Retirement and Other Post-Employment Benefit Plans

We sponsor pension and other post-employment benefit plans in various forms that cover a significant portion of our current and former associates. For post-employment plans with defined benefit obligations, we are required to make significant assumptions and estimates about future events in calculating the expense and the present value of the liability related to these plans. These include assumptions about the interest rates we apply to estimate future defined benefit obligations and net periodic pension expense as well as rates of future pension increases. In addition, our actuarial consultants provide our management with historical statistical information such as withdrawal and mortality rates in connection with these estimates.

Assumptions and estimates used by the Group may differ materially from the actual results we experience due to changing market and economic conditions, higher or lower withdrawal rates, and longer or shorter life spans of participants among other factors. For example, in 2014, a decrease in the interest rate we apply in determining the present value of the defined benefit obligations of one quarter of one percent would have increased our year-end defined benefit pension obligation for plans in Switzerland, US, UK, Germany and Japan, which represent 95% of the Group total defined benefit pension obligation, by approximately $0.8 billion. Similarly, if the 2014 interest rate had been one quarter of one percentage point lower than actually assumed, net periodic pension cost for pension plans in these countries, which represent about 88% of the Group's total net periodic pension cost for pension plans, would have increased by approximately $37 million. Depending on events, such differences could have a material effect on our total equity. For more information on obligations under retirement and other post-employment benefit plans and underlying actuarial assumptions, see "Item 18. Financial Statements—Note 25".

Contingencies

A number of our subsidiaries are involved in various government investigations and legal proceedings (intellectual property, sales and marketing practices, product liability, commercial, employment and

wrongful discharge, environmental claims, etc.) arising out of the normal conduct of their businesses. For more information, see "Item 18. Financial Statements—Note 20".

We record accruals for contingencies when it is probable that a liability has been incurred and the amount can be reliably estimated. These accruals are adjusted periodically as assessments change or additional information becomes available. For significant product liability cases the accrual is actuarially determined based on factors such as past experience, amount and number of claims reported, and estimates of claims incurred but not yet reported. Expected legal defense costs are accrued when the amount can be reliably estimated.

In some instances, the inherent uncertainty of litigation, the resources required to defend against governmental actions, the potential impact on our reputation, and the potential for exclusion from government reimbursement programs in the US and other countries have contributed to decisions by Novartis and other companies in our industry to enter into settlement agreements with governmental authorities. These settlements have had in the past, and may continue in the future, to involve large cash payments, including potential repayment of amounts that were allegedly improperly obtained and other penalties including treble damages. In addition, settlements of governmental healthcare fraud cases often require companies to enter into corporate integrity agreements, which are intended to regulate company behavior for a period of years. Our affiliate Novartis Pharmaceuticals Corporation is a party to such an agreement, which will expire in 2015. Also, matters underlying governmental investigations and settlements may be the subject of separate private litigation.

Provisions are recorded for environmental remediation costs when expenditure on remedial work is probable and the cost can be reliably estimated. Remediation costs are provided for under "Non-current liabilities" in the Group's consolidated balance sheet.

Provisions relating to estimated future expenditure for liabilities do not usually reflect any insurance or other claims or recoveries, since these are only recognized as assets when the amount is reasonably estimable and collection is virtually certain.

Research & Development

Internal Research & Development costs are fully charged to the consolidated income statement in the period in which they are incurred. We consider that regulatory and other uncertainties inherent in the development of new products preclude the capitalization of internal development expenses as an intangible asset usually until marketing approval from the regulatory authority is obtained in a relevant major market, such as for the US, the EU, Switzerland or Japan.

Healthcare Contributions

In many countries our subsidiaries are required to make contributions to the countries' healthcare costs as part of programs other than the ones mentioned above under deductions from revenue. The amounts to be paid depend on various criteria such as the subsidiary's sales volume compared to certain targets or the subsidiary's market share. There is considerable judgment required in estimating these contributions as not all data is available at the period end when the estimates need to be made.

The largest of these healthcare contributions relates to the US Healthcare Reform fee, which was introduced in 2011. This fee is an annual levy to be paid by US pharmaceutical companies, including various Novartis subsidiaries, based on each company's qualifying sales as a percentage of the prior year's government-funded program sales. This pharmaceutical fee levy is recognized in "Other expense".

On July 25, 2014, the US Department of the Treasury and the US Internal Revenue Service issued final guidance on this pharmaceutical fee levy which stipulated that instead of a liability being estimated and recognized immediately with the first qualifying sale in the following fee year, as had been industry practice, the levy is now owed in the year in which the sales occur.

As a result of this final guidance, in 2014, "Other expense" includes the recurring non-tax deductible annual expense of approximately $200 million for the 2014 pharmaceutical fee levy, as well as the non-tax deductible expense of $204 million for the 2013 pharmaceutical fee levy. $204 million of this charge has been considered as an additional exceptional charge in 2014 since it results from the change in timing of recognition of the pharmaceutical fee levy as required by the final guidance.

In addition, effective 2013, the US government also implemented a medical device sales tax which is levied on the Alcon Division's US sales of products that are considered surgical devices under the law. This medical device tax is initially included in the cost of inventory as, for Alcon, the tax is usually levied on intercompany sales. It is expensed as cost of goods sold when the inventory is sold to third parties.

Taxes

We prepare and file our tax returns based on an interpretation of tax laws and regulations, and record estimates based on these judgments and interpretations. Our tax returns are subject to examination by the competent taxing authorities, which may result in an assessment being made requiring payments of additional tax, interest or penalties. Inherent uncertainties exist in our estimates of our tax positions. We believe that our estimated amounts for current and deferred tax assets or liabilities, including any amounts related to any uncertain tax positions, are appropriate based on currently known facts and circumstances.

New Accounting Pronouncements

See "Item 18. Financial Statements—Note 1".

Internal Control Over Financial Reporting

The Group's management has assessed the effectiveness of internal control over financial reporting. The Group's independent statutory auditor also issued an opinion on the effectiveness of internal control over financial reporting. Both the Group's management and its external auditors concluded that the Group maintained, in all material respects, effective internal control over financial reporting as of December 31, 2014.

FACTORS AFFECTING RESULTS OF OPERATIONS

Long-term trends in the composition and behavior of the global population, as well as advances in science and technology, are opening new frontiers in patient treatments and driving demand for healthcare around the world. In the coming years, these changes are expected to drive steady growth overall in the healthcare market and accelerate growth in key segments of our business. At the same time, the current business and regulatory environment poses significant risks and potential impediments to our growth and to the growth of the healthcare industry.

Transformational Changes Fueling Demand

Aging population and shifting behaviors

Scientific advances and increased access to healthcare have contributed to a rise in life expectancy and a fall in birth rates, increasing the proportion of elderly people worldwide. The world's population is projected to increase by nearly 1 billion people by 2025, with the segment of the population over age 50 rising by about 500 million.

With the aging of the global population, there has been an increase in conditions that disproportionately affect the elderly, such as cancers, neurodegenerative diseases, ophthalmological diseases and cardiovascular diseases. Novartis currently develops and offers innovative treatments for many of these conditions. In 2014, for example, Novartis announced the results of the largest heart failure study ever done indicating that LCZ696, its investigational heart failure medicine, demonstrated

superiority to the standard of care. There are 26 million people across the US and Europe alone living with heart failure, facing high risk of death and poor quality of life.

Another major trend in global health is an increase in obesity rates. In the last 20 years, obesity rates have doubled among adults and tripled among children. Today, nearly 30% of the global population is overweight or obese, according to the McKinsey Global Institute. Obesity, combined with inactive lifestyles, contributed to the increased prevalence of chronic diseases, including cardiovascular diseases, respiratory diseases and diabetes. We plan to continue to invest in new treatments to address these growing health threats.

Global rise in healthcare spending

Global healthcare spending continues to rise around the world. IMS Health forecasts $1.3 trillion in drug spending by 2018, up from $1.0 trillion in 2013. And in OECD countries, average public healthcare expenditures are expected to comprise 8% of total GDP in 2060, compared to 5.5% 2010.

While developed countries still dedicate a higher percentage of their GDP to healthcare than the rest of the world, emerging markets are contributing an increasing proportion of global healthcare spending, due in part to a growing middle class. Over the next five years, IMS Health predicts that drug expenditures in developing markets (including Brazil, Russia, India, China, and other countries in Latin America, Africa and Asia) will grow at a compound annual growth rate (CAGR) of 8% to 11%. In comparison, the US market is expected to grow at a CAGR of 5% to 8%.

The global rise in healthcare spending has increased demand for affordable alternatives to patented pharmaceuticals, including generic equivalents and OTC products. By 2017, it is projected that generics will account for 87% of all prescriptions filled in the US, up from 63% in 2007. With a diversified portfolio spanning pharmaceuticals, generics and ophthalmic medicines, we are well-positioned to meet the evolving needs of patients.

Scientific advances opening new opportunities

As research in the fields of biotechnology and genomics has become more sophisticated, we have developed a better understanding of the cellular and genetic basis of diseases. This has given rise to a new generation of innovative therapies that could more effectively target the underlying causes of disease.

For example, our investigational therapy CTL019 works by reprogramming a patient's own T cells to "hunt" cancer cells that express specific proteins. After they have been reprogrammed, the T cells are re-introduced into the patient's blood; they proliferate and bind to the targeted cancer cells and destroy them.

Therapies like these have the potential to transform the treatment of disease. We believe that, as the continuing rapid rise in healthcare spending strains government and household budgets, our ability to leverage scientific advances to generate real innovation—not just incremental innovation—will enable us to create value over the long-term for society, patients and shareholders.

New technologies changing the delivery of healthcare

New healthcare technologies are streamlining the delivery of healthcare and improving patient outcomes. Connected medical devices, for example, can automatically record and share information about a patient's daily medicine intake, allowing doctors to monitor patient adherence and response to treatment. In our Pharmaceuticals Division, we are developing an "*eBreezhaler*" digital device for chronic obstructive pulmonary disease (COPD) patients so doctors can track key health indicators remotely and in real time. We expect this device to reduce hospitalization and increase treatment adherence, improving outcomes at lower costs.

New technologies in the Alcon Division also improve outcomes for cataract patients. The Cataract Refractive Suite, for example, comprises multiple advanced technologies that optimize consistency in the execution of cataract surgery. The *Verion* Image Guided System captures a reference image and helps generate a surgical plan, which is then integrated in the operating room via a tracking overlay, allowing surgeons to see the alignment of all incisions in real time.

In R&D, technology can help optimize clinical trials and accelerate the drug development process. For example, patient travel to and from clinical trial sites is an inconvenience that often contributes to low retention rates. By using mobile apps to remotely record relevant data from clinical trial participants, we expect to improve retention rates and gather more accurate results. With this approach we also expect to lower costs and to help us bring drugs to market quickly and efficiently.

Patient engagement

Patients now have greater access to healthcare information as well as easy tools to communicate with providers, allowing them to be active participants in their own health. According to the Pew Research Center's Internet & American Life Project, 59% of all adults in the US have searched online for information about a disease or treatment, and 11% have posted comments or queries online pertaining to medical matters.

We can engage patients seeking health information online by providing them with platforms and tools to become more active managers of their diseases. For example, as part of a multiple sclerosis (MS) disease awareness campaign, we created an online platform with educational resources for people with relapsing MS to learn more about their condition, including tips on how to engage with healthcare practitioners to optimize their care. The platform also features an original song and video by a celebrity, inspired by his own journey with relapsing MS. Separately, in the UK, we launched the SymTrac app for MS patients, helping them record detailed information about their symptoms and track changes over time. Through digital tools and applications like these, we can complement our medicines and deliver more holistic solutions for patients.

Increasingly Challenging Business Environment

Patent expirations and product competition

IMS Health estimates that between 2012 and 2016, patents will expire on branded pharmaceuticals with global sales totaling $126 billion. The products of our Pharmaceuticals and Alcon Divisions are generally protected by patent rights, allowing us to exclusively market most products. The loss of market exclusivity has had, and will continue to have, an adverse effect on our results of operations. In 2015, the impact of generic competition on our net sales is expected to be as much as $2.5 billion.

Some of our best-selling products have begun to face considerable competition due to the expiration of patent protection. For example:

- The patent on imatinib, the active ingredient in our best-selling product *Gleevec*/*Glivec* (cancer), will expire in July 2015 in the US, in 2016 in the major European countries and expired in 2014 for the main indications in Japan. Additional patents claiming innovative features of *Gleevec*/*Glivec* have been challenged in the US. A settlement with one of these generic manufacturers will allow that manufacturer to enter the US market on February 1, 2016. Generic versions of *Gleevec*/*Glivec* have already launched in a number of countries around the world.
- The patent on valsartan, the active ingredient of *Diovan*/*Co-Diovan*/*Diovan HCT* (high blood pressure), which had long been our best-selling product, has expired in the EU, the US and Japan, and generic competitors have launched there. Patent protection for Co-*Diovan* will expire in Japan in 2016 (including patent term extensions).

Aside from generic competition, all of our businesses face competition from the new products and technological advances of other companies. Doctors and patients may choose other products over ours if they perceive the products to be safer, more effective, easier to administer, less expensive, more convenient, or more cost-effective.

Though patent expirations present a significant challenge to our Pharmaceuticals and Alcon Divisions, they also create an opportunity for Sandoz, our generics business. With our global footprint and advanced technical expertise, we expect Sandoz to help offset the financial impact of generic competition on our branded portfolio.

Heightened regulatory and safety hurdles

Our ability to grow our business is dependent on our ability to bring new products to market. In recent years, health regulators have raised the bar on product innovation, and focused on the benefit-risk profile of pharmaceutical products, emphasizing product safety and incremental improvements over older products in the same therapeutic class. These developments have led to requests for more clinical trial data, the inclusion of significantly higher numbers of patients in those trials, and more detailed analyses post-trial. As a result, the long and expensive process of obtaining regulatory approvals for pharmaceutical products has become even more challenging.

In addition, approved drugs have increasingly been subject to requirements such as risk management plans, comparative effectiveness studies, health technology assessments and post-approval Phase IV clinical trials, making the maintenance of regulatory approvals and achievement of reimbursement for our products increasingly expensive. In addition, these requirements further heighten the risk of recalls, product withdrawals, or loss of market share.

Despite this risk, however, we expect that our focus on understanding disease pathways and improving patient outcomes will allow Novartis to continue to bring innovative, effective and safe medicines to market.

Weak economic environment and increasing pressure on pricing

Against the backdrop of a gradual and uneven global economic recovery, governments have continued to impose cost-containment measures, such as rebates and price reductions, to make medicines more affordable. Pricing pressures affect all of our divisions, which rely on reimbursement, including Pharmaceuticals, Alcon, Sandoz and Vaccines. For example, in 2013, a German agency, the Gemeinsamer Bundesausschuss (G-BA), initiated an analysis of the benefits of drugs approved prior to 2011. As part of that analysis, the G-BA concluded that our type 2 diabetes medicines *Galvus* and *Eucreas* did not provide an added benefit over certain other medicines indicated for the treatment of that disease. As a result, we were unable to reach agreement with the head organization of the German statutory health insurance funds, GKV-Spitzenverband, on an acceptable price for *Galvus* and *Eucreas*, and so, in 2014, we stopped distribution of these products in Germany. We expect these pressures to continue in 2015 as healthcare payers around the world, including government-controlled health authorities, insurance companies and managed care organizations, step up initiatives to reduce the overall cost of healthcare.

In addition to pricing pressures, concerns continue that some countries, including Greece, Italy, Portugal and Spain, may not be able to fully pay us for our products. Other countries, such as Venezuela, have taken steps to introduce exchange controls and limit companies from distributing retained earnings or paying intercompany payables due from those countries. In addition, increasing political and social instability around the world, including in Russia, Ukraine and parts of the Middle East, may lead to significant business disruptions, or other adverse business conditions.

The weak economic environment has also had an impact on consumer behavior, with patients around the world looking for ways to keep healthcare spending to a minimum. According to a recent Gallup poll, around 30% of Americans skip or delay medical treatment due to high costs. Some of our businesses,

including the elective surgical business of our Alcon Division, may be particularly sensitive to declines in consumer spending. Our Pharmaceuticals and Sandoz divisions, and the other remaining businesses of our Alcon Division, may also be sensitive to consumer cutbacks, particularly given the increasing requirements in certain countries, that make patients pay a larger contribution toward their own healthcare costs. To help offset this trend and ensure that patients get the care they need, Novartis offers coupon programs and incentives for patented products to facilitate access to the most effective treatments at a more affordable price.

Risk of liability and supply disruption from manufacturing issues

The manufacture of our products is both highly regulated and complex, which introduces a greater chance for disruptions and liabilities. Government authorities closely regulate our manufacturing processes, and if those processes fail to meet the necessary requirements, then there is a risk that our production facilities could be shut down. Disturbances in our supply chain can lead to product shortages, significant loss in sales revenue, and litigation. Furthermore, since our products are intended to promote the health of patients, any manufacturing issue compromising supply or quality could potentially result in severe government penalties.

In recent years, we have encountered manufacturing issues leading to extended shortages and significant loss in sales and market share. In response, we have outsourced the production of certain key products and devoted considerable resources to resolving issues in our manufacturing processes. These measures to improve quality and assure consistency may limit the profitability of some products.

Beyond regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials. For example, a significant portion of the Group's portfolio, including products from Pharmaceuticals, Alcon, Sandoz and Vaccines, are "biologic" products, produced from living plant or animal micro-organisms. For biologic-based products, even slight deviations at any point in the production process could lead to production failures or recalls. The Group's portfolio also includes a number of sterile products, such as oncology treatments, which are technically complex to manufacture and require strict environmental controls. Accordingly, there is a greater chance of production failures and supply interruptions for these products.

Potential liability arising from legal proceedings

In recent years, there has been a trend of increasing government investigations and litigation against companies operating in our industry, both in the US and other countries. We are obligated to comply with the laws of all countries in which we operate, with new requirements imposed on us as government and public expectations of corporate behavior change. We have a significant global compliance program in place, and devote substantial time and resources to ensure that our business is conducted in a legal and publicly acceptable manner. Despite our efforts, any failure to comply with the law could lead to substantial liabilities that may not be covered by insurance and could affect our business and reputation.

Governments and regulatory authorities worldwide are also increasingly challenging practices previously considered to be legal, and responding to such challenges and new regulations is costly. Such investigations may affect our reputation, create a risk of potential exclusion from government reimbursement programs in the US and other countries, and may lead to costly litigation.

These factors have contributed to recent trends in the pharmaceutical industry to enter into settlement agreements with governmental authorities around the world prior to any formal decision by the authorities. These settlements have involved large cash payments, including the potential repayment of amounts allegedly obtained improperly and penalties of up to treble damages. Settlements of healthcare fraud cases often require companies to enter into corporate integrity agreements, which are intended to regulate company behavior for a period of years. Our affiliate Novartis Pharmaceuticals Corporation is a party to such an agreement, which is scheduled to expire in 2015. Matters underlying governmental

investigations and settlements may also be the subject of separate private litigation. As a result, our subsidiaries are occasionally subject to various legal proceedings, and we may incur future judgments or enter into settlements of claims that could have a material adverse effect on our results of operations or cash flows.

Risks involved in strategic transactions and reorganizations

In 2014, we announced agreements with GlaxoSmithKline plc (GSK), Eli Lilly and Company (Lilly) and CSL Limited (CSL) on a set of transactions intended to transform our portfolio of businesses. In a series of inter-conditional transactions with GSK, Novartis agreed to: acquire GSK oncology products and certain related assets, and was granted a right of first negotiation over the co-development or commercialization of GSK's current and future oncology R&D pipeline, excluding oncology vaccines; create a joint venture with GSK in consumer healthcare, in which Novartis would own 36.5%; and divest its Vaccines Division (excluding the influenza vaccines business) to GSK. Separately, Novartis agreed to divest its Animal Health Division to Lilly, and to divest our influenza vaccines business to CSL.

On January 1, 2015, we completed our divestiture of Animal Health to Lilly. The remaining transactions are subject to closing conditions, including regulatory approvals. The transactions with GSK are expected to close in the first half of 2015, and the transaction with CSL is expected to close in the second half of 2015.

Because of the need for external approvals and certain other contingencies, the remaining transactions may not be completed in the expected form or within the expected time frame, or at all. If the transactions are completed, then certain milestone and royalty payments may be owed if certain conditions are met. But because of the uncertainties involved, we cannot ensure that any such payments will be made either by us or to us. In addition, in agreeing to all of these transactions, we expect to achieve certain strategic benefits, synergies and opportunities, including certain financial results, but such expected benefits may never be fully realized or may take longer to be realized than expected. With respect to the acquisition of the GSK oncology products and related assets, we cannot be certain that the GSK business will be successfully integrated with ours and that key personnel will be retained. Disruption from these transactions may make it more difficult to maintain relationships with customers, employees or suppliers. Lastly, extensive preparations are needed to complete these transactions, as well as the integration and de-integration of the respective businesses, requiring substantial attention from our management. The potential diversion of management's attention away from our continuing businesses could result in the continuing businesses failing to fully achieve expected financial or other results, or in liabilities being incurred that were not known at the time of the transactions, or the creation of tax or accounting issues.

In addition, in 2014, we announced the creation of a shared services organization, Novartis Business Services (NBS). NBS consolidated a number of business support services previously spread across divisions. This reorganization was designed to improve profitability and free up resources that could be reinvested in growth and innovation, and to allow our divisions to focus more on customer-facing activities. But the expected benefits of this reorganization may never be fully realized or may take longer to be realized than expected. There can be no certainty that the numerous business functions involved will be successfully integrated into a single organization and that key personnel will be retained. Disruption from the reorganization may potentially make it more difficult to maintain relationships with customers, employees or suppliers.

NON-IFRS MEASURES AS DEFINED BY NOVARTIS

Novartis uses certain non-IFRS metrics when measuring performance, especially when measuring current year results against prior periods, including core results, figures excluding 2013 Diagnostics business results, constant currencies, EBITDA, free cash flow and net debt.

Despite the use of these measures by management in setting goals and measuring the Group's performance, these are non-IFRS measures that have no standardized meaning prescribed by IFRS. As a result, such measures have limits in their usefulness to investors.

Because of their non-standardized definitions, the non-IFRS measures (unlike IFRS measures) may not be comparable to the calculation of similar measures of other companies. These measures are presented solely to permit investors to more fully understand how the Group's management assesses underlying performance. These measures are not, and should not be viewed as, a substitute for IFRS measures.

As an internal measure of Group performance, these measures have limitations, and the Group's performance management process is not solely restricted to these metrics.

Core Results

The Group's core results—including core operating income, core net income and core earnings per share—exclude the amortization of intangible assets, impairment charges, expenses relating to the integration of acquisitions as well as certain other income and expense items that are, or are expected to accumulate within the year to be, over a $25 million threshold that management deems exceptional.

Novartis believes that investor understanding of the Group's performance is enhanced by disclosing core measures of performance because, since they exclude items which can vary significantly from year to year, the core measures enable better comparison across years. For this same reason, Novartis uses these core measures in addition to IFRS and other measures as important factors in assessing the Group's performance.

The following are examples of how these core measures are utilized:

– In addition to monthly reports containing financial information prepared under IFRS, senior management receives a monthly analysis incorporating these core measures.

– Annual budgets are prepared for both IFRS and core measures.

2013 Results Excluding Diagnostics Unit

On January 9, 2014, Novartis completed the divestment to Grifols S.A. of our former blood transfusion diagnostics unit, which had been included in our former Vaccines and Diagnostics Division. Because the divestment occurred near the beginning of 2014, Novartis believes that investor understanding of the Group's performance would be enhanced by disclosing a comparison of the Novartis 2014 results against 2013 results that exclude the results of the divested business, since it will assist investors in evaluating the Group's performance on a more comparable basis from year to year. For this reason, management has used this comparison, in addition to IFRS and other measures, in its assessments of the Group's performance.

Constant Currencies

Changes in the relative values of non-US currencies to the US dollar can affect the Group's financial results and financial position. To provide additional information that may be useful to investors, including changes in sales volume, we present information about our net sales and various values relating to operating and net income that are adjusted for such foreign currency effects.

Constant currency calculations have the goal of eliminating two exchange rate effects so that an estimate can be made of underlying changes in the consolidated income statement excluding the impact of fluctuations in exchange rates:

– the impact of translating the income statements of consolidated entities from their non-US dollar functional currencies to US dollars; and

– the impact of exchange rate movements on the major transactions of consolidated entities performed in currencies other than their functional currency.

We calculate constant currency measures by translating the current year's foreign currency values for sales and other income statement items into US dollars using the average exchange rates from the prior year and comparing them to the prior year values in US dollars.

We use these constant currency measures in evaluating the Group's performance, since they may assist us in evaluating our ongoing performance from year to year. However, in performing our evaluation, we also consider equivalent measures of performance which are not affected by changes in the relative value of currencies.

Growth Rate Calculation

For ease of understanding, Novartis uses a sign convention for its growth rates such that a reduction in operating expenses or losses compared to the prior year is shown as a positive growth.

Free Cash Flow

Novartis defines free cash flow as cash flow from operating activities adjusted to exclude cash flow associated with the purchase or sale of property, plant and equipment, intangible, other non-current and financial assets. Cash flows in connection with the acquisition or divestment of subsidiaries, associated companies and non-controlling interests in subsidiaries are not taken into account to determine free cash flow.

Free cash flow is presented as additional information because Novartis considers it to be a useful indicator of the Group's ability to operate without relying on additional borrowing or the use of existing cash. Free cash flow is a measure of the net cash generated that is available for debt repayment, investment in strategic opportunities and for returning to shareholders. Novartis uses free cash flow in internal comparisons of results from the Group's divisions. Free cash flow of the divisions uses the same definition as for the Group. No tax or financial receipts or payments are included in the division calculations. The definition of free cash flow used by Novartis does not include amounts related to changes in investments in associated companies nor related to acquisitions or divestments of subsidiaries. Free cash flow is not intended to be a substitute measure for cash flow from operating activities (as determined under IFRS).

Net debt

Novartis defines net debt as current and non-current financial debt less cash and cash equivalents, current investments and derivative financial instruments.

EBITDA

Novartis defines earnings before interest, tax, depreciation and amortization (EBITDA) as operating income excluding depreciation of property, plant and equipment (including any related impairment charges), amortization of intangible assets (including any related impairment charges).

	2014	2013	Change
	$ m	$ m	$ m
Group operating income	**10,736**	**10,910**	**(174)**
Depreciation of property, plant & equipment	1,652	1,755	(103)
Amortization of intangible assets	2,852	2,976	(124)
Impairments of property, plant & equipment and intangible assets	1,462	194	1,268
Group EBITDA	**16,702**	**15,835**	**867**

Enterprise Value

Enterprise value represents the total amount that shareholders and debt holders have invested in Novartis, less the Group's liquidity.

	Dec 31, 2014	Dec 31, 2013	Change
	$ m	$ m	$ m
Market capitalization	223,728	194,157	29,571
Non-controlling interests	78	129	(51)
Financial debts and derivatives	20,411	18,018	2,393
Liquidity	(13,862)	(9,222)	(4,640)
Enterprise value	**230,355**	**203,082**	**27,273**
Enterprise value/EBITDA	**14**	**13**	

Novartis Economic Value Added

Novartis utilizes its own definition for measuring Novartis Economic Value Added (NVA), which is utilized for determining payouts under the Old Long-Term Performance Plan (OLTPP). The following table shows NVA for 2014 and 2013 utilizing the Novartis definition:

	Year ended Dec 31, 2014	Year ended Dec 31, 2013	Change in $
	$ m	$ m	%
Group operating income	**10,736**	**10,910**	**(2)**
Income from associated companies	1,920	600	220
Operating interest	(336)	(335)	0
Operating tax	(2,500)	(2,151)	(16)
Capital charge	(6,300)	(6,330)	0
Novartis Economic Value Added	**3,520**	**2,694**	**31**

Operating interest is the internal charge on average working capital based on the short-term borrowing rates of the entity owning them.

Operating tax is the internal tax charge for each entity applying the applicable tax rate to the operational profit before tax of each entity unadjusted for tax-disallowed items or tax loss carryforwards.

The capital charge is the notional interest charge on the Group's average non-current assets based on an internally calculated weighted average cost of capital for the Group.

2014 AND 2013 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—GROUP

2014	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, including restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**39,175**	**2,757**	**281**		**(120)**	**42,093**
Operating income	**10,736**	**2,816**	**1,574**	**(647)**	**137**	**14,616**
Income before taxes	**11,921**	**3,073**	**1,575**	**(647)**	**(1,096)**	**14,826**
Taxes	(1,641)					(2,071)[5]
Net income	**10,280**					**12,755**
Basic earnings per share ($)[6]	4.21					5.23
The following are adjustments to arrive at Core Gross Profit						
Other revenues	1,280				(302)	978
Cost of goods sold	(20,101)	2,757	281		182	(16,881)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(14,189)				22	(14,167)
Research & Development	(9,943)	56	298		17	(9,572)
General & Administration	(3,047)				64	(2,983)
Other income	2,380		(16)	(876)	(902)	586
Other expense	(3,640)	3	1,011	229	1,056	(1,341)
The following are adjustments to arrive at Core Income before taxes						
Income from associated companies	1,920	257	1		(1,233)	945

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms; Other expense includes amortization of intangible assets; Income from associated companies includes $257 million for the Novartis share of the estimated Roche core items.

(2) Impairments: Cost of goods sold, Research & Development, Other income and Other expense consist principally of net impairment charges or reversals related to intangible assets, property, plant and equipment and financial assets; Cost of goods sold and Other expense also include the $1.1 billion impairment charge as a result of the proposed sale of the influenza vaccines business; Other expense also includes an additional impairment charge incurred in Corporate, for an in-process R&D project which is pending divestment as a result of the proposed portfolio transformation transactions.

(3) Acquisition or divestment related items, including restructuring and integration charges: Other income includes the gain on the disposal of the blood transfusion diagnostics unit on January 9, 2014; Other expense includes costs related to the planned acquisition of GSK oncology assets as well as professional service fees related to the portfolio transformation divestment activities.

(4) Other exceptional items: Other revenues includes an amount for a commercial settlement; Cost of goods sold includes charges for the Group-wide rationalization of manufacturing sites; Marketing & Sales, Research & Development and General & Administration include charges for transforming IT and finance processes; Other income includes product related divestment gains and gains in the Novartis Venture Fund, an insurance recovery net of a deferred amount, a partial reversal of a legal expense provision, a reduction in restructuring provisions, and the impact from a post-retirement medical plan amendment; Other expense includes restructuring provision charges, charges for transforming IT and finance processes, an expense related to *Lucentis* in Italy, the expense of $204 million related to the advancement of the timing of recording the US Healthcare Fee liability as a result of final regulations, and a write-off of a receivable as a result of the proposed portfolio transformation transactions; Income from associated companies includes gains from the divestment of Idenix and Lohmann shareholdings.

(5) Taxes on the adjustments between IFRS and core results take into account, for each individual item included in the adjustment, the tax rate that will finally be applicable to the item based on the jurisdiction where the adjustment will finally have a tax impact. Generally, this results in amortization and impairment of intangible assets and acquisition-related restructuring and integration items having a full tax impact. There is usually a tax impact on exceptional items although this is not the case for items arising from criminal settlements in certain jurisdictions. Adjustments related to income from associated companies are recorded net of any related tax effect. Due to these factors and the differing effective tax rates in the various jurisdictions, the tax on the total adjustments of $2.9 billion to arrive at the core results before tax amounts to $430 million. The average tax rate on the adjustments is 14.8% since the estimated full year tax charge has been applied to the pre-tax income of the period.

(6) Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

2013	IFRS results excluding diagnostics[1]	Amortization of intangible assets[2]	Impairments[3]	Acquisition or divestment related items, including restructuring and integration charges[4]	Other exceptional items[5]	Core results excluding diagnostics[1]
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**38,883**	**2,811**	**28**		**41**	**41,763**
Operating income	**10,671**	**2,900**	**259**	**331**	**30**	**14,191**
Income before taxes	**10,496**	**3,159**	**259**	**349**	**74**	**14,337**
Taxes	(1,352)					(1,986)[6]
Net income	**9,144**					**12,351**
Basic earnings per share ($)[7]	3.70					5.01
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(19,171)	2,811	28		41	(16,291)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(14,504)				27	(14,477)
Research & Development	(9,823)	85	86		39	(9,613)
General & Administration	(3,039)				25	(3,014)
Other income	1,358		(53)		(506)	799
Other expense	(2,204)	4	198	331	404	(1,267)
The following are adjustments to arrive at Core Income before taxes						
Income from associated companies	600	259		18		877
Other financial income and expense	(92)				44	(48)

(1) 2013 excludes the blood transfusion diagnostics unit divested on January 9, 2014.

(2) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms; Other expense includes amortization of intangible assets; Income from associated companies includes $259 million for the Novartis share of the estimated Roche core items.

(3) Impairments: Cost of goods sold, Research & Development, Other income and Other expense include principally net impairment charges or reversals related to intangible assets and property, plant and equipment, mainly related to the Group-wide rationalization of manufacturing sites.

(4) Acquisition or divestment related items, including restructuring and integration charges: Other expense includes Alcon integration costs. Income from associated companies includes restructuring charges related to Roche.

(5) Other exceptional items: Cost of goods sold, Other income and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Marketing & Sales includes charges related to termination of a co-promotional contract; Research & Development also includes a net increase of contingent consideration liabilities related to acquisitions; General & Administration includes exceptional IT-related costs; Other income includes divestment gains, a reversal of a Corporate provision, income from post-retirement medical plan amendments and reduction in restructuring charge provisions; Other expense includes a restructuring provision charge, provisions for legal matters, and charges for transforming IT and finance processes; Other financial income and expense includes devaluation losses of $44 million related to Venezuela.

(6) Taxes on the adjustments between IFRS and core results take into account, for each individual item included in the adjustment, the tax rate that will finally be applicable to the item based on the jurisdiction where the adjustment will finally have a tax impact. Generally, this results in amortization and impairment of intangible assets and acquisition-related restructuring and integration items having a full tax impact. There is usually a tax impact on exceptional items although this is not the case for items arising from criminal settlements in certain jurisdictions. Adjustments related to income from associated companies are recorded net of any related tax effect. Due to these factors and the differing effective tax rates in the various jurisdictions, the tax on the total adjustments of $3.8 billion to arrive at the core results before tax amounts to $634 million. This results in the average tax rate on the adjustments being 16.5%.

(7) Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

2013 RECONCILIATION OF GROUP IFRS AND CORE RESULTS EXCLUDING BLOOD TRANSFUSION DIAGNOSTICS UNIT

	IFRS			Core		
2013	**Group results as published in 2013**	**Divested blood transfusion diagnostics unit**	**Group results excluding diagnostics**	**Group core results as published in 2013**	**Divested blood transfusion diagnostics unit core adjustments**	**Group core results excluding diagnostics**
	$ m	**$ m**	**$ m**	**$ m**	**$ m**	**$ m**
Net sales	**57,920**	**(565)**	**57,355**	**57,920**	**(565)**	**57,355**
Other revenues	911	(212)	699	911	(212)	699
Cost of goods sold	(19,608)	437	(19,171)	(16,673)	382	(16,291)
Gross profit	**39,223**	**(340)**	**38,883**	**42,158**	**(395)**	**41,763**
Marketing & Sales	(14,549)	45	(14,504)	(14,522)	45	(14,477)
Research & Development	(9,852)	29	(9,823)	(9,642)	29	(9,613)
General & Administration	(3,060)	21	(3,039)	(3,035)	21	(3,014)
Other income	1,367	(9)	1,358	808	(9)	799
Other expense	(2,219)	15	(2,204)	(1,282)	15	(1,267)
Operating Income	**10,910**	**(239)**	**10,671**	**14,485**	**(294)**	**14,191**
Net Income	**9,292**	**(148)**	**9,144**	**12,533**	**(182)**	**12,351**

2012 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—GROUP

2012	IFRS results excluding diagnostics[1]	Amortization of intangible assets[2]	Impairments[3]	Acquisition or divestment related items, including restructuring and integration charges[4]	Other exceptional items[5]	Core results excluding diagnostics[1]
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**38,510**	**2,722**	**174**	**39**	**43**	**41,488**
Operating income	**11,003**	**2,811**	**356**	**330**	**87**	**14,587**
Income before taxes	**10,735**	**2,980**	**356**	**364**	**87**	**14,522**
Taxes[6]	(1,470)					(2,105)
Net income	**9,265**					**12,417**
EPS ($)[7]	**3.78**					**5.09**
The following are adjustments to arrive at Core Gross Profit						
Other revenues	701				(56)	645
Cost of goods sold	(18,302)	2,722	174	39	99	(15,268)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(14,307)			1		(14,306)
Research & Development	(9,297)	86	109		20	(9,082)
General & Administration	(2,917)				14	(2,903)
Other income	1,048		(1)		(373)	674
Other expense	(2,034)	3	74	290	383	(1,284)
The following are adjustments to arrive at Core Income before taxes						
Income from associated companies	552	169		34		755

(1) 2012 figures exclude the blood transfusion diagnostics unit that was divested on January 9, 2014.

(2) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms; Other expense includes amortization of intangible assets; Income from associated companies includes the recurring amortization of the purchase price allocation related to intangible assets included in the Novartis equity-method accounting for Roche of $153 million and $16 million for the Novartis share of the estimated Roche core items.

(3) Impairments: Cost of goods sold, Research & Development, Other income, and Other expense include principally impairments of intangible assets and property, plant & equipment; Other expense also includes impairments of financial assets.

(4) Acquisition or divestment related items, including restructuring and integration charges: Cost of goods sold includes acquisition related inventory step-up adjustments; Marketing & Sales and Other expense relate to Alcon and Fougera integration costs; Income from associated companies includes a $16 million revaluation gain on the initial interest in an acquired company and the Novartis share of $50 million restructuring charge related to Roche.

(5) Other exceptional items: Other revenues include an income of $56 million related to an intellectual property settlement and license agreement; Cost of goods sold, Research & Development, Other income, and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold also includes an additional charge of $22 million for product recalls related to a US production plant; Research & Development also includes a net $18 million increase of contingent consideration liabilities related to business combinations; General & Administration includes exceptional IT-related costs; Other income includes a provision reduction of $137 million mainly related to Tekturna/Rasilez inventories, a product divestment gain of $93 million, a reversal of prior year

restructuring charges of $76 million, and a gain on divestment from the sale of financial assets of $51 million; Other expense includes principally a restructuring charge of $149 million related to the US business, and charges for transforming IT and finance processes of $117 million.

(6) Taxes on the adjustments between IFRS and core results take into account, for each individual item included in the adjustment, the tax rate that will finally be applicable to the item based on the jurisdiction where the adjustment will finally have a tax impact. Generally, this results in amortization and impairment of intangible assets and acquisition related restructuring and integration items having a full tax impact. There is usually a tax impact on exceptional items although this is not the case for items arising from criminal settlements in certain jurisdictions. Adjustments related to income from associated companies are recorded net of any related tax effect. Due to these factors and the differing effective tax rates in the various jurisdictions, the tax on the total adjustments of $3.8 billion to arrive at the core results before tax amounts to $635 million. This results in the average tax rate on the adjustments being 16.8%.

(7) Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

2012 RECONCILIATION OF GROUP IFRS AND CORE RESULTS EXCLUDING BLOOD TRANSFUSION DIAGNOSTICS UNIT

	IFRS			Core		
2012	**Group results as published in 2012**	**Divested blood transfusion diagnostics unit**	**Group results excluding diagnostics**	**Group core results as published in 2012**	**Divested blood transfusion diagnostics unit core adjustments**	**Group core results excluding diagnostics**
	$ m	**$ m**	**$ m**	**$ m**	**$ m**	**$ m**
Net sales	**56,673**	**(562)**	**56,111**	**56,673**	**(562)**	**56,111**
Other revenues	888	(187)	701	832	(187)	645
Cost of goods sold	(18,756)	454	(18,302)	(15,658)	390	(15,268)
Gross profit	**38,805**	**(295)**	**38,510**	**41,847**	**(359)**	**41,488**
Marketing & Sales	(14,353)	46	(14,307)	(14,352)	46	(14,306)
Research & Development	(9,332)	35	(9,297)	(9,116)	34	(9,082)
General & Administration	(2,937)	20	(2,917)	(2,923)	20	(2,903)
Other income	1,049	(1)	1,048	675	(1)	674
Other expense	(2,039)	5	(2,034)	(1,289)	5	(1,284)
Operating income	**11,193**	**(190)**	**11,003**	**14,842**	**(255)**	**14,587**
Net income	**9,383**	**(118)**	**9,265**	**12,576**	**(159)**	**12,417**

2014, 2013 AND 2012 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS— PHARMACEUTICALS

2014	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, including restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**25,793**	**238**	**(58)**		**127**	**26,100**
Operating income	**8,471**	**276**	**266**	**33**	**468**	**9,514**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(6,889)	238	(58)		127	(6,582)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(8,178)				2	(8,176)
Research & Development	(7,331)	38	289		7	(6,997)
General & Administration	(1,009)				1	(1,008)
Other income	734		(13)		(451)	270
Other expense	(1,538)		48	33	782	(675)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of good sold includes partial reversal of previously impaired production assets, partly offset by the impairment of intangible assets related to a marketed product; Research & Development includes impairment charges for in process projects and termination of collaboration and license agreements; Other income relates to impairment reversals of property, plant and equipment; Other expense includes impairment charges related to property, plant and equipment and financial assets.

(3) Acquisition or divestment related items, including restructuring and integration charges: Other expense includes costs related to the planned acquisition of GSK oncology assets.

(4) Other exceptional items: Cost of goods sold, Research & Development and Marketing & Sales include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Other income includes an insurance recovery from Corporate related to exchange risks, gains related to the rationalization of manufacturing sites, the impact from a post-retirement medical plan amendment, as well as additional gains from divestments announced in prior periods; Other expense include restructuring charges, an expense related to *Lucentis* in Italy and an expense of $157 million related to the advancement of the timing of recording the US Healthcare Fee liability as a result of final regulations.

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**26,258**	**228**		**6**	**26,492**
Operating income	**9,376**	**278**	**74**	**(205)**	**9,523**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(6,655)	228		6	(6,421)
The following are adjustments to arrive at Core Operating Income					
Marketing & Sales	(8,514)			27	(8,487)
Research & Development	(7,242)	50	29	2	(7,161)
Other income	699		(46)	(390)	263
Other expense	(774)		91	150	(533)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Research & Development includes impairment charges for in process projects; Other income includes charges related to the reversal of impairment charges related to aliskiren production equipment for which an alternative use has been found; Other expense includes impairment charges related to property, plant and equipment.

(3) Other exceptional items: Cost of goods sold includes principally restructuring charges related to the Group-wide rationalization of manufacturing sites offset by a provision reduction related to aliskiren; Marketing & Sales includes charges related to termination of a co-promotional contract; Research & Development includes restructuring charges; Other income includes principally divestment gains and a reduction in restructuring charge provisions; Other expense includes restructuring charges and provisions for legal matters.

2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**26,323**	**270**	**120**	**54**	**26,767**
Operating income	**9,598**	**322**	**238**	**55**	**10,213**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(6,578)	270	120	54	(6,134)
The following are adjustments to arrive at Core Operating Income					
Research & Development	(6,918)	52	91	78	(6,697)
Other income	577		(1)	(303)	273
Other expense	(755)		28	226	(501)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairments related to marketed products; Research & Development includes principally impairment charges related to In Process Research & Development; Other income includes reversal of impairment of property, plant & equipment; Other expense includes impairments of property, plant & equipment and financial assets.

(3) Other exceptional items: Cost of goods sold, Research & Development, Other income, and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Research & Development

includes principally an increase of a contingent consideration liability related to a business combination; Other income includes a provision reduction of $137 million mainly related to *Tekturna*/*Rasilez* inventories, a product divestment gain of $93 million, and reversal of prior year restructuring charges of $70 million; Other expense includes a restructuring charge of $149 million related to the US business, an additional legal settlement provision of $19 million and an additional provision of $19 million related to *Tekturna*/*Rasilez* clinical studies, and a restructuring charge of $42 million related to the European and Asian business.

2014, 2013 AND 2012 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—ALCON

2014	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**5,717**	**2,056**		**26**	**7,799**
Operating income	**1,597**	**2,064**	**6**	**144**	**3,811**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(5,193)	2,056		26	(3,111)
The following are adjustments to arrive at Core Operating Income					
Marketing & Sales	(2,474)			20	(2,454)
Research & Development	(928)	8	7	10	(903)
General & Administration	(613)			45	(568)
Other income	79		(1)	(52)	26
Other expense	(184)			95	(89)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Research & Development includes impairment charges for in process projects; Other income includes a reversal of impairment charges related to property, plant and equipment.

(3) Other exceptional items: Cost of goods sold and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Marketing & Sales and General & Administration include charges for transforming IT and finance processes; Research & Development includes a net increase of contingent consideration liabilities related to acquisitions; Other income includes the reversal of restructuring charges related to the Group-wide rationalization of manufacturing sites, as well as the impact from a post-retirement medical plan amendment; Other expense also includes an expense of $29 million related to the advancement of the timing of recording the US Healthcare Fee liability as a result of final regulations.

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, including restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**5,673**	**1,980**			**12**	**7,665**
Operating income	**1,232**	**1,989**	**61**	**330**	**82**	**3,694**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(4,900)	1,980			12	(2,908)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(1,042)	9	57		37	(939)
General & Administration	(589)				25	(564)
Other income	79				(40)	39
Other expense	(437)		4	330	48	(55)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Research & Development includes impairment charges related to in process projects; Other expense includes impairment charges related to property, plant and equipment.

(3) Acquisition or divestment related items, including restructuring and integration charges: Other expense reflects acquisition-related Alcon integration and restructuring charges.

(4) Other exceptional items: Cost of goods sold includes net restructuring charges related to the Group-wide rationalization of manufacturing sites offset by the release of a contingent consideration liability related to recent acquisitions; Research & Development includes a net increase of contingent consideration liabilities related to acquisitions; General & Administration includes exceptional IT costs; Other income includes the impact of an income from a post-retirement medical plan amendment; Other expense includes net restructuring charges related to European commercial operations and the Group-wide rationalization of manufacturing sites.

2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, including restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**5,716**	**1,906**	**1**		**16**	**7,639**
Operating income	**1,465**	**1,915**	**17**	**264**	**37**	**3,698**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(4,618)	1,906	1		16	(2,695)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(975)	9	16			(950)
General & Administration	(510)				14	(496)
Other income	49				(1)	48
Other expense	(353)			264	8	(81)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairments of intangible assets; Research & Development includes impairment charges related to In Process Research & Development.

(3) Acquisition or divestment related items, including restructuring and integration charges: Other expense relates to Alcon integration costs.

(4) Other exceptional items: Cost of goods sold, Other income, and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; General & Administration includes exceptional IT costs.

2014, 2013 AND 2012 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—SANDOZ

2014	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**4,109**	**398**	**37**	**10**	**4,554**
Operating income	**1,088**	**400**	**47**	**36**	**1,571**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(5,751)	398	37	10	(5,306)
The following are adjustments to arrive at Core Operating Income					
Research & Development	(827)	2	2		(823)
Other income	97		(1)	(3)	93
Other expense	(190)		9	29	(152)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold and Research & Development include charges related to impairment of intangible assets; Other income includes a reversal of impairment charges related to property, plant and equipment; Other expense includes impairment charges related to property, plant and equipment and financial assets.

(3) Other exceptional items: Cost of goods sold and Other expense include net restructuring charges; Other income includes the reversal of restructuring charges; Other expense also includes an expense of $18 million related to the advancement of the timing of recording the US Healthcare Fee liability as a result of final regulations.

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**3,995**	**407**	**20**	**2**	**4,424**
Operating income	**1,028**	**409**	**17**	**87**	**1,541**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(5,476)	407	20	2	(5,047)
The following are adjustments to arrive at Core Operating Income					
Research & Development	(787)	2			(785)
Other income	106		(6)		100
Other expense	(240)		3	85	(152)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairment charges related to intangible assets; Other income includes a reversal of impairment charges related to property, plant and equipment; Other expense includes impairment charges related to property, plant and equipment.

(3) Other exceptional items: Cost of goods sold includes net restructuring charges related to the Group-wide rationalization of manufacturing sites; Other expense includes provisions for legal matters.

2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, including restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**3,867**	**356**	**46**	**36**	**4**	**4,309**
Operating income	**1,091**	**364**	**46**	**62**	**(60)**	**1,503**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(5,126)	356	46	36	4	(4,684)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(1,561)			1		(1,560)
Research & Development	(695)	8	(3)		(59)	(749)
Other income	74				(10)	64
Other expense	(244)		3	25	5	(211)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairments of intangible assets; Research & Development includes principally a reversal of impairment charges related to In Process Research & Development; Other expense includes impairments of property, plant & equipment.

(3) Acquisition or divestment related items, including restructuring and integration charges: Cost of goods sold includes Fougera related inventory step-up adjustment; Marketing & Sales and Other expense relate to Fougera integration costs.

(4) Other exceptional items: Cost of goods sold and Other income include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Research & Development includes principally a decrease of a contingent consideration liability related to a business combination; Other income also includes a restructuring provision release; Other expense includes exceptional remediation charges.

2014, 2013 AND 2012 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—CORPORATE CONTINUING

2014	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**670**			**(302)**	**368**
Operating loss	**(67)**	**3**	**114**	**(473)**	**(423)**
The following are adjustments to arrive at Core Gross Profit					
Other revenues	540			(302)	238
The following are adjustments to arrive at Core Operating Loss					
General & Administration	(618)			18	(600)
Other income	481			(307)	174
Other expense	(600)	3	114	118	(365)

(1) Amortization of intangible assets: Other expense includes amortization of intangible assets.

(2) Impairments: Other expense includes impairment charges related to property, plant and equipment and financial assets.

(3) Other exceptional items: Other revenues includes an amount for a commercial settlement; General & Administration includes expenses related to setup costs for Novartis Business Services; Other income includes an insurance recovery transferred to Pharmaceuticals net of a deferred amount and gains in the Novartis Venture Fund; Other expense includes charges for transforming IT and finance processes, as well as a provision for a legal settlement.

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, including restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**211**					**211**
Operating loss	**(653)**	**3**	**59**	**1**	**39**	**(551)**
The following are adjustments to arrive at Core Operating Loss						
Other income	321				(75)	246
Other expense	(596)	3	59	1	114	(419)

(1) Amortization of intangible assets: Other expense includes amortization of intangible assets.

(2) Impairments: Other expense includes impairment charges related to property, plant and equipment and to a financial asset.

(3) Acquisition or divestment related items, including restructuring and integration charges: Other expense reflects Alcon integration costs.

(4) Other exceptional items: Other income includes a reversal of a provision; Other expense includes charges for transforming IT and finance processes.

2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, including restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**199**					**199**
Operating loss	**(647)**	**3**	**33**	**1**	**66**	**(544)**
The following are adjustments to arrive at Core Operating Loss						
Other income	243				(51)	192
Other expense	(484)	3	33	1	117	(330)

(1) Amortization of intangible assets: Other expense includes amortization of intangible assets.

(2) Impairments: Other expense includes impairments primarily for financial assets.

(3) Acquisition-related divestment gains, including restructuring and integration charges: Other expense principally represents Alcon-related charges.

(4) Other exceptional items: Other income includes a gain on divestment related to the Novartis Venture Funds; Other expense includes charges for transforming IT and finance processes.

2014, 2013 AND 2012 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS— DISCONTINUING OPERATIONS

2014	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, including restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,886**	**65**	**302**		**19**	**3,272**
Operating income	**(353)**	**73**	**1,141**	**(680)**	**(38)**	**143**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(3,073)	65	302		19	(2,687)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(857)	8				(849)
Other income	1,007		(1)	(876)	(89)	41
Other expense	(1,146)		840	196	32	(78)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets up to the portfolio transformation annoucement date; Research & Development includes the recurring amortization of acquired rights for technology platforms up to the portfolio transformation annoucement date.

(2) Impairments: Cost of goods sold and Other expense include the $1.1 billion impairment charge as a result of the proposed sale of the influenza vaccines business; Other income includes a reduction of an impairment charge for property, plant and equipment; Other expense relates to an additional impairment charge in Corporate, for an in-process project which is pending divestment as a result of the proposed portfolio transformation transactions.

(3) Acquisition or divestment related items, including restructuring and integration charges: Other income includes the gain on the disposal of the blood transfusion diagnostics unit on January 9, 2014; Other expense includes professional service fees related to the portfolio transformation divestment activities.

(4) Other exceptional items: Cost of goods sold and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Other income includes the gain on the sale of a divested product, which was sold as a result of the proposed portfolio transformation transaction, the reversal of restructuring charges related to the Group-wide rationalization of manufacturing sites, the partial reversal of a legal expense provision, and the impact from a post-retirement medical plan amendment; Other expense also includes the write-off of a receivable as a result of the proposed portfolio transformation transactions.

2013	IFRS results excluding diagnostics[1]	Amortization of intangible assets[2]	Impairments[3]	Other exceptional items[4]	Core results excluding diagnostics[1]
	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,746**	**196**	**8**	**21**	**2,971**
Operating loss	**(312)**	**221**	**48**	**27**	**(16)**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(2,875)	196	8	21	(2,650)
The following are adjustments to arrive at Core Operating Loss					
Research & Development	(752)	24			(728)
Other income	165		(1)	(1)	163
Other expense	(169)	1	41	7	(120)

(1) 2013 figures exclude the blood transfusion diagnostics unit which was divested on January 9, 2014.

(2) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(3) Impairments: Cost of goods sold includes impairment charges related to intangible assets; Other income includes a reduction of an impairment charge; Other expense includes impairments of property, plant and equipment related to the Group-wide rationalization of manufacturing sites.

(4) Other exceptional items: Cost of goods sold and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Other income includes reversal of charges related to the Group-wide rationalization of manufacturing sites.

2012	IFRS excluding diagnostics[1]	Amortization of intangible assets[2]	Impairments[3]	Acquisition or divestment related items, including restructuring and integration charges[4]	Other exceptional items[5]	Core results excluding diagnostics[1]
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,405**	**190**	**7**	**3**	**(31)**	**2,574**
Operating loss	**(504)**	**207**	**22**	**3**	**(11)**	**(283)**
The following are adjustments to arrive at Core Gross Profit						
Other revenues	60				(56)	4
Cost of goods sold	(2,748)	190	7	3	25	(2,523)
The following are adjustments to arrive at Core Operating Loss						
Research & Development	(709)	17	5		1	(686)
Other income	126				(8)	118
Other expense	(219)		10		27	(182)

(1) 2012 figures exclude the blood transfusion diagnostics unit that was divested on January 9, 2014.

(2) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(3) Impairments: Cost of goods and Research & Development includes impairments of intangible assets; Other expense includes impairments of property, plant & equipment, a facility impairment charge and impairments of financial assets.

(4) Acquisition or divestment related items, including restructuring and integration charges: Cost of goods sold includes an acquisition related inventory step-up adjustment.

(5) Other exceptional items: Other revenues include an income related to an intellectual property settlement and license agreement; Cost of goods sold, Research & Development, Other income, and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold also includes an additional charge for product recalls related to a US production plant and an impairment of a long-term asset; Other income includes a restructuring provision release; Other expense includes a legal settlement related to a US production plant.

2014, 2013 AND 2012 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—VACCINES

2014	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, including restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**298**	**49**	**302**		**1**	**650**
Operating loss	**(552)**	**57**	**1,071**	**(862)**	**(4)**	**(290)**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(1,336)	49	302		1	(984)
The following are adjustments to arrive at Core Operating loss						
Research & Development	(545)	8				(537)
Other income	905			(876)		29
Other expense	(812)		769	14	(5)	(34)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets up to the portfolio transformation announcement date; Research & Development includes the recurring amortization of acquired rights for technology platforms up to the portfolio transformation announcement date.

(2) Impairments: Cost of goods sold and Other expense include the $1.1 billion impairment charge as a result of the proposed sale of the influenza vaccines business.

(3) Acquisition or divestment related items, including restructuring and integration charges: Other income includes the gain on the disposal of the blood transfusion diagnostics unit on January 9, 2014; Other expense includes professional service fees related to the portfolio transformation divestment activities.

(4) Other exceptional items: Cost of goods sold relates to restructuring charges; Other expense includes an adjustment to a restructuring charge.

2013	IFRS results excluding diagnostics[1]	Amortization of intangible assets[2]	Impairments[3]	Core results excluding diagnostics[1]
	$ m	$ m	$ m	$ m
Gross profit	**386**	**143**		**529**
Operating loss	**(477)**	**167**	**8**	**(302)**
The following are adjustments to arrive at Core Gross Loss				
Cost of goods sold	(1,124)	143		(981)
The following are adjustments to arrive at Core Operating Loss				
Research & Development	(447)	24		(423)
Other expense	(69)		8	(61)

(1) 2013 figures exclude the blood transfusion diagnostics unit which was divested on January 9, 2014.

(2) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(3) Impairments: Other expense includes impairment charges for financial assets and property, plant and equipment.

2012	IFRS results excluding diagnostics[1]	Amortization of intangible assets[2]	Impairments[3]	Acquisition or divestment related items, including restructuring and integration charges[4]	Other exceptional items[5]	Core results excluding diagnostics[1]
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**353**	**133**		**3**	**(56)**	**433**
Operating loss	**(542)**	**150**	**12**	**3**	**(55)**	**(432)**
The following are adjustments to arrive at Core Gross Profit						
Other revenues	34				(56)	(22)
Cost of goods sold	(1,021)	133		3		(885)
The following are adjustments to arrive at Core Operating Loss						
Research & Development	(418)	17	5		1	(395)
Other expense	(105)		7			(98)

(1) 2012 figures exclude the blood transfusion diagnostics unit that was divested on January 9, 2014.

(2) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(3) Impairments: Research & Development includes impairments of intangible assets; Other expense includes a facility impairment charge and impairments of financial assets.

(4) Acquisition or divestment related items, including restructuring and integration charges: Cost of goods sold includes an acquisition related inventory step-up adjustment.

(5) Other exceptional items: Other revenues include an income related to an intellectual property settlement and license agreement; Research & Development includes restructuring charges related to the Group-wide rationalization of manufacturing sites.

2014, 2013 AND 2012 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—CONSUMER HEALTH

2014	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, including restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,588**	**16**			**18**	**2,622**
Operating income	**470**	**16**	**(1)**	**23**	**(56)**	**452**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(1,737)	16			18	(1,703)
The following are adjustments to arrive at Core Operating Income						
Other income	99		(1)		(89)	9
Other expense	(60)		—	23	15	(22)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets up to the portfolio transformation announcement date.

(2) Impairments: Other income includes a reduction of an impairment charge for property, plant and equipment.

(3) Acquisition or divestment related items, including restructuring and integration charges: Other expense includes professional service fees related to the portfolio transformation divestment activities.

(4) Other exceptional items: Cost of goods sold and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Other income includes the gain on the sale of a divested product, which was sold as a result of the proposed portfolio transformation transaction, the reversal of restructuring charges related to the Group-wide rationalization of manufacturing sites, the partial reversal of a legal expense provision, and the impact from a post-retirement medical plan amendment.

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,360**	**53**	**8**	**21**	**2,442**
Operating income	**178**	**53**	**40**	**27**	**298**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(1,751)	53	8	21	(1,669)
The following are adjustments to arrive at Core Operating Income					
Other income	79		(1)	(1)	77
Other expense	(63)		33	7	(23)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets.

(2) Impairments: Cost of goods sold includes impairment charges related to intangible assets; Other income includes a reduction of an impairment charge; Other expense includes impairments of property, plant and equipment related to the Group-wide rationalization of manufacturing sites.

(3) Other exceptional items: Cost of goods sold and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Other income includes reversal of charges related to the Group-wide rationalization of manufacturing sites.

2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,050**	**57**	**7**	**25**	**2,139**
Operating income	**48**	**57**	**10**	**44**	**159**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(1,729)	57	7	25	(1,640)
The following are adjustments to arrive at Core Operating Income					
Other income	75			(8)	67
Other expense	(73)		3	27	(43)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets.

(2) Impairments: Cost of goods sold includes impairments of intangible assets; Other expense includes impairments of property, plant & equipment.

(3) Other exceptional items: Cost of goods sold, Other income, and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold also includes an additional charge for product recalls related to a US production plant and an impairment of a long-term asset; Other income includes a restructuring provision release; Other expense includes a legal settlement related to a US production plant.

2014, 2013 AND 2012 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—CORPORATE DISCONTINUING

2014	IFRS results	Impairments[1]	Acquisition or divestment related items, including restructuring and integration charges[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**0**				**0**
Operating loss	**(271)**	**71**	**159**	**22**	**(19)**
The following are adjustments to arrive at Core Operating Loss					
Other expense	(274)	71	159	22	(22)

(1) Impairments: Other expense relates to an impairment charge incurred for an in-process project which is pending divestment as a result of the proposed portfolio transformation transactions.

(2) Acquisition or divestment related items, including restructuring and integration charges: Other expense includes professional service fees related to the portfolio transformation divestment activities.

(3) Other exceptional items: Other expense relates to a write-off of a receivable as a result of the proposed portfolio transformation transactions.

2013	IFRS results	Amortization of intangible assets[1]	Core results
	$ m	$ m	$ m
Gross profit	**0**		**0**
Operating loss	**(13)**	**1**	**(12)**
The following are adjustments to arrive at Core Operating Loss			
Other income	25		25
Other expense	(37)	1	(36)

(1) Amortization of intangible assets: Other expense includes amortization of intangible assets.

There were no core adjustments for Corporate discontinuing in 2012.

2014 and 2013 Reconciliation of segment operating income to Core operating income

	Pharmaceuticals		Alcon		Sandoz		Corporate continuing operations		Total continuing operations		Total discontinuing operations[1]		Group[1]	
	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
IFRS Operating income	**8,471**	**9,376**	**1,597**	**1,232**	**1,088**	**1,028**	**(67)**	**(653)**	**11,089**	**10,983**	**(353)**	**(73)**	**10,736**	**10,910**
Adjustment for divested blood transfusion diagnostics unit												(239)		(239)
Operating income excluding blood transfusion diagnostics unit	**8,471**	**9,376**	**1,597**	**1,232**	**1,088**	**1,028**	**(67)**	**(653)**	**11,089**	**10,983**	**(353)**	**(312)**	**10,736**	**10,671**
Amortization of intangible assets	**276**	**278**	**2,064**	**1,989**	**400**	**409**	**3**	**4**	**2,743**	**2,680**	**73**	**220**	**2,816**	**2,900**
Impairments														
Intangible assets	231	29	7	57	39	20			277	106	405	8	682	114
Property, plant & equipment related to the Group-wide rationalization of manufacturing sites	23	1							23	1	(1)	33	22	34
Other property, plant & equipment	(8)	28	(1)	4	7	(3)	23	17	21	46	737		758	46
Financial assets	20	16			1		91	41	112	57		8	112	65
Total impairment charges	**266**	**74**	**6**	**61**	**47**	**17**	**114**	**58**	**433**	**210**	**1,141**	**49**	**1,574**	**259**
Acquisition or divestment related items														
—Gains											(876)		(876)	
—Expenses	33		330					1	33	331	196		229	331
Total acquisition-related items, net	**33**		**330**					**1**	**33**	**331**	**(680)**		**(647)**	**331**
Other exceptional items														
Exceptional divestment gains	(237)	(313)					(294)		(531)	(313)			(531)	(313)
Restructuring items														
—Income	(56)	(40)	(24)		(3)				(83)	(40)	(7)		(90)	(40)
—Expense	632	122	95	77	21	2	1		749	201	28	25	777	226
Legal-related items														
—Income											(2)		(2)	
—Expense	125	33				85	30		155	118			155	118
Additional exceptional income	(158)	(70)	(29)	(56)		(4)	(315)	(75)	(502)	(205)	(81)		(583)	(205)
Additional exceptional expense	162	63	102	61	18	4	105	114	387	242	24	2	411	244
Total other exceptional items	**468**	**(205)**	**144**	**82**	**36**	**87**	**(473)**	**39**	**175**	**3**	**(38)**	**27**	**137**	**30**
Total adjustments	**1,043**	**147**	**2,214**	**2,462**	**483**	**513**	**(356)**	**102**	**3,384**	**3,224**	**496**	**296**	**3,880**	**3,520**
Core operating income	**9,514**	**9,523**	**3,811**	**3,694**	**1,571**	**1,541**	**(423)**	**(551)**	**14,473**	**14,207**	**143**	**(16)**	**14,616**	**14,191**
Core return on net sales	**29.9%**	**29.6%**	**35.2%**	**35.2%**	**16.4%**	**16.8%**			**27.7%**	**27.4%**	**2.5%**	**−0.3%**	**25.2%**	**24.7%**

(1) 2013 excludes the blood transfusion diagnostics unit that was divested on January 9, 2014.

2013 and 2012 Reconciliation of segment operating income to Core operating income

	Pharmaceuticals		Alcon		Sandoz		Corporate continuing operations		Total continuing operations		Total discontinuing operations[1]		Group[1]	
	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
IFRS Operating income	**9,376**	**9,598**	**1,232**	**1,465**	**1,028**	**1,091**	**(653)**	**(647)**	**10,983**	**11,507**	**(73)**	**(314)**	**10,910**	**11,193**
Adjustment for divested blood transfusion diagnostics unit											(239)	(190)	(239)	(190)
Operating income excluding blood transfusion diagnostics unit	**9,376**	**9,598**	**1,232**	**1,465**	**1,028**	**1,091**	**(653)**	**(647)**	**10,983**	**11,507**	**(312)**	**(504)**	**10,671**	**11,003**
Amortization of intangible assets	**278**	**322**	**1,989**	**1,915**	**409**	**364**	**4**	**3**	**2,680**	**2,604**	**220**	**207**	**2,900**	**2,811**
Impairments														
Intangible assets	29	211	57	17	20	43			106	271	8	12	114	283
Property, plant & equipment related to the Group-wide rationalization of manufacturing sites	1								1		33		34	
Other property, plant & equipment	28	25	4		(3)	3	17	2	46	30		9	46	39
Financial assets	16	2					41	31	57	33	8	1	65	34
Total impairment charges	**74**	**238**	**61**	**17**	**17**	**46**	**58**	**33**	**210**	**334**	**49**	**22**	**259**	**356**
Acquisition-related items —Expenses			330	264		62	1	1	331	327		3	331	330
Total acquisition-related items, net			**330**	**264**		**62**	**1**	**1**	**331**	**327**		**3**	**331**	**330**
Other exceptional items														
Exceptional divestment gains	(313)	(93)						(51)	(313)	(144)			(313)	(144)
Restructuring items														
—Income	(40)	(70)		(1)		(10)			(40)	(81)		(8)	(40)	(89)
—Expense	122	240	77	24	2	4			201	268	25	4	226	272
Legal-related items														
—Expense	33	19			85				118	19		25	118	44
Additional exceptional income	(70)	(137)	(56)		(4)	(59)	(75)		(205)	(196)		(56)	(205)	(252)
Additional exceptional expense	63	96	61	14	4	5	114	117	242	232	2	24	244	256
Total other exceptional items	**(205)**	**55**	**82**	**37**	**87**	**(60)**	**39**	**66**	**3**	**98**	**27**	**(11)**	**30**	**87**
Total adjustments	**147**	**615**	**2,462**	**2,233**	**513**	**412**	**102**	**103**	**3,224**	**3,363**	**296**	**221**	**3,520**	**3,584**
Core operating income	**9,523**	**10,213**	**3,694**	**3,698**	**1,541**	**1,503**	**(551)**	**(544)**	**14,207**	**14,870**	**(16)**	**(283)**	**14,191**	**14,587**
Core return on net sales	**29.6%**	**31.8%**	**35.2%**	**36.2%**	**16.8%**	**17.3%**			**27.4%**	**29.1%**	**−0.3%**	**−5.6%**	**24.7%**	**26.0%**

(1) 2012 and 2013 exclude the blood transfusion diagnostics unit that was divested on January 9, 2014.

5.B Liquidity and Capital Resources

The following tables summarize the Group's cash flow and net debt.

	2014	2013	2012
	$ m	$ m	$ m
Group cash flows from operating activities	13,897	13,174	14,194
Group cash flows from/used in investing activities	881	(3,352)	(5,675)
Group cash flows used in financing activities	(8,147)	(8,769)	(6,675)
Currency translation effect on cash and cash equivalents	(295)	82	(1)
Net change in cash and cash equivalents	**6,336**	**1,135**	**1,843**
Change in marketable securities, commodities, time deposits and derivative financial instruments	(1,696)	(32)	1,201
Change in current and non-current financial debts and derivative financial instruments	(2,393)	1,708	503
Change in net debt	**2,247**	**2,811**	**3,547**
Net debt at January 1	(8,796)	(11,607)	(15,154)
Net debt at December 31	**(6,549)**	**(8,796)**	**(11,607)**

CASH FLOW

Financial year 2014

Cash flow from Group total operating activities increased to $13.9 billion from $13.2 billion in 2013, an increase of $0.7 billion. This was primarily due to higher operating income adjusted for non-cash items, despite negative currency effects and increased hedging gains, partially offset by payments for legal settlements and restructuring.

The Group's total investing activities resulted in an inflow of $0.9 billion compared to an outflow of $3.4 billion in 2013 mainly on account of an inflow from the net proceeds of $1.1 billion related to the divestment of the blood transfusion diagnostics unit to Grifols S.A.. In 2014, there were also proceeds from the sale of investments in associated companies included, in particular LTS Lohmann Therapie-Systeme AG and Idenix Pharmaceuticals, Inc. of $0.6 billion and $0.8 billion respectively and of $1.9 billion from the net sale of other marketable securities including maturing long-term deposits. These inflows were offset by outflows of $2.6 billion for property, plant and equipment and a net amount of $0.7 billion for acquisition of businesses mainly the acquisition of WaveTec ($0.4 billion) and other non-current assets, primarily intangible assets. The prior year outflow for investing activities of $3.4 billion was primarily related to investments in property, plant and equipment of $2.9 billion and a net outflow of $0.5 billion for the acquisition of businesses and other non-current assets, mainly intangible assets.

The Group total cash flows used in financing activities amounted to $8.1 billion, compared to $8.8 billion, in 2013. The current year includes the dividend payment of $6.8 billion, net treasury share transactions of $4.5 billion and a net increase in financial debt of $3.3 billion, principally due to the issuance of four bonds totaling $5.5 billion reduced by the repayment at maturity of a bond of $2.0 billion. In 2013, the dividend payment amounted to $6.1 billion, net treasury share transactions were $1.2 billion and financial debt decreased by a net amount of $1.3 billion.

Financial year 2013

In 2013, cash flow from Group total operating activities amounted to $13.2 billion compared to $14.2 billion in the prior year, mainly due to lower operating income and higher working capital requirements.

In 2013, Group total cash flow used in investing activities was $3.4 billion compared to $5.7 billion in the prior year. It includes investments in property, plant and equipment, which amounted to $3.1 billion compared to $2.7 billion in the prior year. These expenditures represent 5.3% and 4.8% of net sales in 2013 and 2012, respectively. The prior year cash flow used in investing activities included higher net investments in marketable securities of $1.1 billion and $1.7 billion for the acquisition of businesses mainly for the acquisition of Fougera Pharmaceuticals, Inc.

In 2013, Group total cash flow used in financing activities amounted to $8.8 billion compared to $6.7 billion in 2012. The 2013 amount included a dividend payment of $6.1 billion, compared to $6.0 billion in 2012. There was a further $2.7 billion cash outflow in 2013, mainly related to net repayments of financial debts of $1.3 billion as well as a net outflow of $1.2 billion for treasury share purchases. This net outflow results from $2.9 billion spent on the acquisition of treasury shares and $1.7 billion of proceeds mainly from exercised options. In 2012, besides the dividend payment the cash flow used in financing activities mainly includes a net repayment of financial debts of $0.5 billion and a net cash outflow of $0.1 billion for treasury share transactions.

Financial year 2012

In 2012, cash flow from Group total operating activities amounted to $14.2 billion, only marginally lower than the strong prior year amount of $14.3 billion as the impact of lower tax payments was offset by the payments from provisions created in earlier periods.

The Group total cash flow used in investing activities amounted to $5.7 billion, $4.9 billion higher than 2011, which primarily reflected the amount spent for the acquisition of Fougera Pharmaceuticals, Inc. ($1.5 billion) and net investments in property, plant and equipment and other non-current assets, which amounted to $2.8 billion, while the net investment in marketable securities amounted to $1.1 billion. In 2011, the impact of the net investments in property, plant and equipment and in other non-current assets ($1.8 billion), as well as the cash used for acquisitions ($0.6 billion), were partially offset by the net proceeds from the sale of marketable securities ($1.6 billion).

In 2012, Group total cash used in financing activities amounted to $6.7 billion mainly on account of the dividend payment ($6.0 billion) and $0.5 billion net repayment of financial debt and represented a decrease of $8.3 billion compared to the prior year period. In 2011, the cash flow used in financing activities amounted to $15.0 billion mainly on account of the dividend payment ($5.4 billion), treasury share transactions ($3.5 billion), the acquisition of the non-controlling interest in Alcon ($3.2 billion) and $2.8 billion for the net repayment of financial debt.

NET DEBT

Net debt constitutes a non-IFRS financial measure, which means that it should not be interpreted as a measure determined under International Financial Reporting Standards (IFRS). Net debt/liquidity is presented as additional information as it is a useful indicator of the Group's ability to meet financial commitments and to invest in new strategic opportunities, including strengthening its balance sheet.

Financial year 2014

In 2014, the total gross financial debt increased by $2.4 billion, and amounted to $20.4 billion compared to $18.0 billion in 2013.

Non-current financial debt amounted to $13.8 billion which is a net increase of $2.6 billion compared to 2013, mainly due to the issuance of four bonds and additional long-term debt totaling $5.5 billion. This is partly offset by $2.9 billion bond and loan reclassification to current financial debt for the portion which is due within the next twelve months. Non-current financial debt consists of bonds of $13.2 billion and other non-current financial debt of $0.6 billion.

Current financial debt decreased by $0.2 billion from $6.8 billion at December 31, 2013 to $6.6 billion at December 31, 2014, mainly due to a decrease of commercial paper and other financial debt, including derivatives, totaling $0.6 billion. This was partially offset by the reclassification of non-current financial debt of $3.0 billion, combined with repayments in 2014 of non-current financial debts amounting to $2.6 billion, totaling to a net increase of $0.4 billion.

Overall current financial debt consists of commercial paper of $0.6 billion, the current portion of non-current debt of $3.0 billion and other short-term borrowings (including derivatives) of $3.0 billion.

Group net debt decreased to $6.5 billion at the end of 2014 compared to $8.8 billion at the end of 2013.

The long-term credit rating for the company continues to be double-A (Moody's Aa3; Standard & Poor's AA−; Fitch AA).

Financial year 2013

In 2013, the total gross financial debt decreased by $1.7 billion and amounted to $18.0 billion compared to $19.7 billion in 2012.

Non-current financial debt amounted to $11.2 billion which is a reduction of $2.6 billion compared to 2012, mainly due to a bond and loan reclassification to current financial debt which are due within the next twelve months. Non-current financial debt consists of bonds of $10.9 billion and other non-current financial debt of $0.3 billion.

Current financial debt increased by $0.9 billion from $5.9 billion at December 31, 2012 to $6.8 billion at December 31, 2013, mainly due to $2.6 billion reclassification of non-current financial debt and a repayment of $2.0 billion bond in the second quarter of 2013 totaling a net increase of $0.6 billion. In addition, commercial paper and other current financial debts, including derivatives, increased by $0.3 billion. Overall current financial debt consists of commercial paper of $1.0 billion, the current portion of non-current financial debt of $2.6 billion and other short term borrowings (including derivatives) of $3.2 billion.

Group net debt decreased to $8.8 billion at the end of 2013 compared to $11.6 billion at the end of 2012.

An overview of the movements in our current financial debt and related interest rates is set forth below:

	December 31	Average interest rate at year end	Average balance during the year	Average interest rate during the year	Maximum balance during the year
	$ m	%	$ m	%	$ m
2014					
Interest-bearing accounts of associates payable on demand	1,651	1.00	1,792	1.00	1,891
Other bank and financial debt	1,272	5.32	1,537	4.40	2,074
Commercial paper	648	0.26	1,260	0.13	3,076
Current portion of non-current financial debt	2,989	na	2,565	na	3,500
Fair value of derivative financial instruments	52	na	51	na	92
Total current financial debt	**6,612**		**7,204**		**10,633**
2013					
Interest-bearing accounts of associates payable on demand	1,718	0.96	1,658	1.00	1,718
Other bank and financial debt	1,323	4.27	1,485	3.77	1,940
Commercial paper	1,042	0.24	1,935	0.13	3,867
Current portion of non-current financial debt	2,590	na	3,319	na	4,007
Fair value of derivative financial instruments	103	na	118	na	259
Total current financial debt	**6,776**		**8,515**		**11,791**

na = not applicable or available

Interest bearing accounts of associates payable on demand relate to employee deposits in CHF from the compensation of associates employed by Swiss entities (actual interest rate: 1%). Other bank and financial debt refer to usual lending and overdraft facilities.

The maturity schedule of our net debt is as follows:

December 31, 2014	Due or due within one month	Due later than one month but less than three months	Due later than three months but less than one year	Due later than one year but less than five years	Due after five years	Total
	$ m	$ m	$ m	$ m	$ m	$ m
Current assets						
Marketable securities and time deposits	21	68	37	181	76	383
Commodities	97					97
Derivative financial instruments and accrued interest	161	126	72			359
Cash and cash equivalents	9,623	3,400				13,023
Total current financial assets	**9,902**	**3,594**	**109**	**181**	**76**	**13,862**
Non-current liabilities						
Financial debt				(5,423)	(8,376)	(13,799)
Financial debt—undiscounted				*(5,434)*	*(8,470)*	*(13,904)*
Total non-current financial debt				**(5,423)**	**(8,376)**	**(13,799)**
Current liabilities						
Financial debt	(2,678)	(335)	(3,547)			(6,560)
Financial debt—undiscounted	*(2,678)*	*(335)*	*(3,549)*			*(6,562)*
Derivative financial instruments	(18)	(32)	(2)			(52)
Total current financial debt	**(2,696)**	**(367)**	**(3,549)**			**(6,612)**
Net debt	**7,206**	**3,227**	**(3,440)**	**(5,242)**	**(8,300)**	**(6,549)**

December 31, 2013	Due or due within one month	Due later than one month but less than three months	Due later than three months but less than one year	Due later than one year but less than five years	Due after five years	Total
	$ m	$ m	$ m	$ m	$ m	$ m
Current assets						
Marketable securities and time deposits	12	1,933	101	179	87	2,312
Commodities	97					97
Derivative financial instruments and accrued interest	26	97	3			126
Cash and cash equivalents	6,187	500				6,687
Total current financial assets	**6,322**	**2,530**	**104**	**179**	**87**	**9,222**
Non-current liabilities						
Financial debt				(5,201)	(6,041)	(11,242)
Financial debt—undiscounted				*(5,212)*	*(6,087)*	*(11,299)*
Total non-current financial debt				**(5,201)**	**(6,041)**	**(11,242)**
Current liabilities						
Financial debt	(2,896)	(2,270)	(1,507)			(6,673)
Financial debt—undiscounted	*(2,896)*	*(2,270)*	*(1,507)*			*(6,673)*
Derivative financial instruments	(44)	(37)	(22)			(103)
Total current financial debt	**(2,940)**	**(2,307)**	**(1,529)**			**(6,776)**
Net debt	**3,382**	**223**	**(1,425)**	**(5,022)**	**(5,954)**	**(8,796)**

The following table provides a breakdown of liquidity and financial debt by currency as of December 31:

	Liquidity in % 2014[1]	Liquidity in % 2013	Financial debt in % 2014[2]	Financial debt in % 2013
$	80	80	59	58
EUR	1	1	17	12
CHF	10	11	13	15
JPY			8	11
Other	9	8	3	4
	100	100	100	100

(1) Liquidity includes cash and cash equivalents, marketable securities, commodities and time deposits.

(2) Financial debt includes non-current and current financial debt.

EFFECTS OF CURRENCY FLUCTUATIONS

We transact our business in many currencies other than the US dollar, our reporting currency.

The following provides an overview of net sales and operating expenses for our continuing operations based on IFRS values for 2014 and 2013 and for total Group for 2012 for currencies most important to the Group:

Currency		2014	2013	2012
		%	%	%
US dollar ($)	Net sales	36	36	36
	Operating expenses	39	40	39
Euro (EUR)	Net sales	26	26	25
	Operating expenses	25	25	25
Swiss franc (CHF)	Net sales	2	2	2
	Operating expenses	13	12	13
Japanese yen (JPY)	Net sales	7	8	9
	Operating expenses	5	5	5
Russian ruble (RUB)	Net sales	2	2	2
	Operating expenses	1	1	1
Other currencies	Net sales	27	26	26
	Operating expenses	17	17	17

Operating expenses in the above table include Cost of goods sold, Marketing & Sales, Research & Development, General & Administration, Other Income and Other Expense.

We prepare our consolidated financial statements in US dollars. As a result, fluctuations in the exchange rates between the US dollar and other currencies can have a significant effect on both the Group's results of operations as well as on the reported value of our assets, liabilities and cash flows. This in turn may significantly affect reported earnings (both positively and negatively) and the comparability of period-to-period results of operations.

For purposes of our consolidated balance sheets, we translate assets and liabilities denominated in other currencies into US dollars at the prevailing market exchange rates as of the relevant balance sheet date. For purposes of the Group's consolidated income and cash flow statements, revenue, expense and cash flow items in local currencies are translated into US dollars at average exchange rates prevailing

during the relevant period. As a result, even if the amounts or values of these items remain unchanged in the respective local currency, changes in exchange rates have an impact on the amounts or values of these items in our consolidated financial statements.

Because our expenditures in Swiss francs are significantly higher than our revenues in Swiss francs, volatility in the value of the Swiss franc can have a significant impact on the reported value of our earnings, assets and liabilities, and the timing and extent of such volatility can be difficult to predict. In addition, there is a risk that certain countries could take other steps which could significantly impact the value of their currencies. Such steps could include "quantitative easing" measures and potential withdrawals by countries from common currencies.

There is also a risk that certain countries could devalue their currency. If this occurs, then it could impact the effective prices we would be able to charge for our products and also have an adverse impact on both our consolidated income statement and balance sheet. The Group is exposed to a potential adverse devaluation risk on its intercompany funding and total investment in certain subsidiaries operating in countries with exchange controls. The most significant country in this respect is Venezuela, where the Group has an equivalent of approximately $0.4 billion of cash in local currency, which is only slowly being approved for remittance outside of the country. As a result, the Group is exposed to a potential devaluation loss in the income statement on its total intercompany balances with its subsidiaries in Venezuela, which at December 31, 2014 amounted to $0.4 billion. The Group continues to use for the consolidation of the financial statements of its Venezuelan subsidiaries the official exchange rate of VEF 6.3/$, which is applied for health and food imports as published by the Centro Nacional de Comercio Exterior (CENCOEX, formerly CADIVI).

We seek to manage currency exposure by engaging in hedging transactions where management deems appropriate, after taking into account the natural hedging afforded by our global business activity. For 2014, we entered into various contracts that change in value with movements in foreign exchange rates in order to preserve the value of assets, commitments and expected transactions. We use forward contracts and foreign currency options to hedge expected transactions denominated in foreign currencies. For more information on how these transactions affect our consolidated financial statements and on how foreign exchange rate exposure is managed, see "Item 18. Financial Statements—Notes 1, 5, 16 and 29".

In 2014, the US dollar significantly increased in value against most currencies. In particular, the average value of the Japanese yen and emerging market currencies (especially the ruble) decreased in 2014 against the US dollar. In January 2015, following an announcement by the Swiss National Bank that it was discontinuing its minimum exchange rate with the euro, the value of the Swiss franc increased substantially.

The following table sets forth the foreign exchange rates of the US dollar against key currencies used for foreign currency translation when preparing the Group's consolidated financial statements:

	Average for year		Change	Year-end		Change
$ per unit	**2014**	**2013**	**in %**	**2014**	**2013**	**in %**
EUR	1.329	1.328	0	1.215	1.378	(12)
CHF	1.094	1.079	1	1.010	1.124	(10)
GBP	1.648	1.564	5	1.556	1.653	(6)
JPY (100)	0.947	1.026	(8)	0.836	0.952	(12)
RUB (100)	2.649	3.142	(16)	1.722	3.044	(43)

	Average for year		Change	Year-end		Change
$ per unit	**2013**	**2012**	**in %**	**2013**	**2012**	**in %**
EUR	1.328	1.286	3	1.378	1.319	4
CHF	1.079	1.067	1	1.124	1.093	3
GBP	1.564	1.585	(1)	1.653	1.616	2
JPY (100)	1.026	1.254	(18)	0.952	1.161	(18)
RUB (100)	3.142	3.221	(2)	3.044	3.283	(7)

The following table provides a summary of the currency impact on key Group figures due to their conversion into US dollar, the Group's reporting currency, of the financial data from entities reporting in non-US dollars. Constant currency (cc) calculations apply the exchange rates of the prior year to the current year financial data for entities reporting in non-US dollars.

	Change in constant currencies % 2014	Change in $% 2014	Percentage point currency impact 2014	Change in constant currencies % 2013	Change in $% 2013	Percentage point currency impact 2013
Net sales	2	0	(2)	4	2	(2)
Operating income	5	(2)	(7)	5	(3)	(8)
Net income	17	11	(6)	7	(1)	(8)
Core operating income[1]	8	3	(5)	3	(2)	(5)
Core net income[1]	8	3	(5)	5	0	(5)

(1) In 2014, the comparisons to prior year for the core operating income and core net income are based on 2013 data excluding the divested blood transfusion diagnostics unit.

For additional information on the effects of currency fluctuations, see "Item 18. Financial Statements—note 29".

FREE CASH FLOW

Novartis defines free cash flow as cash flow from operating activities adjusted to exclude cash flow associated with the purchase or sale of property, plant and equipment, intangible, other non-current and financial assets. Cash flows in connection with the acquisition or divestment of subsidiaries, associated companies and non-controlling interests in subsidiaries are not taken into account to determine free cash

flow. The Group's free cash flow measure, which is a non-IFRS measure, see "—Non-IFRS Measures as defined by Novartis" above. The following is a summary of the Group's free cash flow:

	2014	2013	2012
	$ m	$ m	$ m
Operating income from continuing operations	**11,089**	**10,983**	**11,507**
Reversal of non-cash items			
Depreciation, amortization and impairments	4,751	4,462	4,475
Change in provisions and other non-current liabilities	1,490	736	791
Other	122	307	423
Operating income adjusted for non-cash items	**17,452**	**16,488**	**17,196**
Interest and other financial receipts	1,067	539	685
Interest and other financial payments	(692)	(631)	(616)
Taxes paid	(2,179)	(2,054)	(2,166)
Payments out of provisions and other net cash movements in non-current liabilities	(1,125)	(947)	(1,124)
Change in inventory and trade receivables less trade payables	(731)	(588)	82
Change in other net current assets and other operating cash flow items	106	(190)	(247)
Cash flows from operating activities from continuing operations	**13,898**	**12,617**	**13,810**
Purchase of property, plant & equipment	(2,624)	(2,903)	(2,458)
Purchase of intangible assets	(780)	(475)	(314)
Purchase of financial assets	(239)	(152)	(166)
Purchase of other non-current assets	(60)	(38)	(56)
Proceeds from sales of property, plant & equipment	60	48	82
Proceeds from sales of intangible assets	246	96	117
Proceeds from sales of financial assets	431	313	220
Proceeds from sales of other non-current assets	2	15	16
Free cash flow from continuing operations	**10,934**	**9,521**	**11,251**
Free cash flow used in/from discontinuing operations	(172)	424	132
Group free cash flow	**10,762**	**9,945**	**11,383**

Financial year 2014

In 2014, free cash flow of the total Group increased by $0.8 billion to $10.8 billion compared to $9.9 billion in 2013. The free cash flow from continuing operations increased by $1.4 billion to $10.9 billion. This was primarily due to higher cash flows from operating activities, which mainly benefited from higher operating income adjusted for non-cash items, despite negative currency effects and increased hedging gains, partially offset by higher investments in intangible assets.

Financial year 2013

In 2013, the Group total free cash flow of $9.9 billion was 13% below the prior year. Aside from the significant currency impact, major reasons for the decline were increased trade receivables and higher capital investments in manufacturing and research facilities.

The Group total free cash flow was primarily used for the dividend payments to shareholders of $6.1 billion as well as a $1.3 billion net repayment of financial debt and for treasury share purchases of net $1.2 billion.

This allocation reflects management's intention to optimize shareholder returns whilst at the same time reinvesting surplus funds in the business to promote future growth.

Financial year 2012

In 2012, the Group total free cash flow of $11.4 billion was $1.1 billion lower than the prior year mainly on account of higher investments in property, plant and equipment of $2.7 billion compared to $2.2 billion (4.8% of net sales compared to 3.7% in 2011) and lower divestment proceeds which amounted to $0.5 billion in 2012 compared to $0.8 billion in 2011.

The Group total free cash flow was primarily used for dividend payments to shareholders of $6.0 billion (compared to $5.4 billion in 2011), for the recent acquisitions which on a net cash basis amounted to $1.7 billion (mainly Fougera Pharmaceuticals Inc.), and for the reduction of net debt of $3.5 billion. This allocation reflects Management's intention to optimize shareholders returns whilst at the same time reinvesting surplus funds in the business to promote future growth.

CONDENSED CONSOLIDATED BALANCE SHEETS

	Dec 31, 2014	Dec 31, 2013	Change
	$ m	$ m	$ m
Assets			
Property, plant & equipment	15,983	18,197	(2,214)
Goodwill	29,311	31,026	(1,715)
Intangible assets other than goodwill	23,832	27,841	(4,009)
Financial and other non-current assets	18,700	18,648	52
Total non-current assets	**87,826**	**95,712**	**(7,886)**
Inventories	6,093	7,267	(1,174)
Trade receivables	8,275	9,902	(1,627)
Other current assets	2,530	3,392	(862)
Cash, marketable securities, commodities, time deposits and derivative financial instruments	13,862	9,222	4,640
Assets related to discontinuing operations[1]	6,801	759	6,042
Total current assets	**37,561**	**30,542**	**7,019**
Total assets	**125,387**	**126,254**	**(867)**
Equity and liabilities			
Total equity	**70,844**	**74,472**	**(3,628)**
Financial debts	13,799	11,242	2,557
Other non-current liabilities	13,771	14,172	(401)
Total non-current liabilities	**27,570**	**25,414**	**2,156**
Trade payables	5,419	6,148	(729)
Financial debts and derivatives	6,612	6,776	(164)
Other current liabilities	12,524	13,394	(870)
Liabilities related to discontinuing operations[1]	2,418	50	2,368
Total current liabilities	**26,973**	**26,368**	**605**
Total liabilities	**54,543**	**51,782**	**2,761**
Total equity and liabilities	**125,387**	**126,254**	**(867)**

(1) For details of discontinuing operations in the consolidated balance sheet refer to "Item 18. Financial Statements—Note 30" of the consolidated financial statements.

There has been a significant reclassification of assets as a result of the portfolio transformation announced on April 22, 2014. Total non-current assets of $87.8 billion at December 31, 2014 decreased by $7.9 billion as compared to 2013, mainly as a result of the assets transferred to discontinuing operations. Total current assets increased by $7.0 billion to $37.6 billion at December 31, 2014, also mainly due to the reclassification mentioned above.

Excluding the effect of the reclassifications, total non-current assets decreased by $3.7 billion to $92.1 billion at December 31, 2014. The reduction of $3.3 billion in intangible assets and goodwill was driven by the amortization and impairment charges of $3.5 billion. Property, plant and equipment reduced by $0.8 billion. This was partially offset by an increase in financial and other non-current assets of $0.4 billion. Excluding the effect of reclassifications, trade receivables and other current assets decreased by $0.5 billion respectively while inventory remained stable at $7.3 billion.

Based on our current incurred loss provisioning approach, we consider that our doubtful debt provisions are adequate. However, we intend to continue to monitor the level of trade receivables in Greece, Italy, Portugal and Spain (the "GIPS countries"). Should there be a substantial deterioration in our economic exposure with respect to those countries, we may increase our level of provisions by moving to an expected loss provisioning approach or may change the terms of trade on which we operate.

The following table provides an overview of our aging analysis of our trade receivables as of December 31, 2014 and 2013:

	2014	2013
	$ m	$ m
Not overdue	7,406	8,522
Past due for not more than one month	334	502
Past due for more than one month but less than three months	275	297
Past due for more than three months but less than six months	174	254
Past due for more than six months but less than one year	102	257
Past due for more than one year	140	265
Provisions for doubtful trade receivables	(156)	(195)
Total trade receivables, net	**8,275**	**9,902**

With regard to the GIPS countries, the countries with the largest outstanding trade receivables exposure are Italy and Spain. Substantially all of the outstanding trade receivables from these countries are due directly from local governments or from government-funded entities. The movement in the outstanding trade receivables from Italy and Spain during the year and the related outstanding trade receivables and provision at December 31, 2014 and 2013 is as follows:

ITALY

	2014	2013
	$ m	$ m
Gross trade receivables at December 31	385	636
Past due for more than one year at December 31	37	55
Provision at December 31	29	43

SPAIN

	2014	2013
	$ m	$ m
Gross trade receivables at December 31	271	563
Past due for more than one year at December 31	13	111
Provision at December 31	6	22

At December 31, 2014 trade payables of $5.4 billion, other current liabilities of $12.5 billion and other non-current liabilities of $13.8 billion decreased compared to prior year, mainly due to the reclassification to discontinuing operations. On a comparable basis, trade payables of the Group decreased slightly by $0.1 billion compared to the prior year while other current liabilities and other non-current liabilities increased by $0.2 billion and by $0.3 billion respectively.

Included in other current liabilities are $2.1 billion relating to outstanding taxes. While there is some uncertainty about the final taxes to be assessed in our major countries, we consider this uncertainty to be limited since our tax assessments are generally relatively current. In our key countries, Switzerland and the US, assessments have been agreed by the tax authorities up to 2009, with the exception of one open US position in 2007.

The Group's equity decreased by $3.6 billion to $70.8 billion at December 31, 2014 mainly on account of currency translation differences of $2.2 billion. Net actuarial losses and the repurchase commitment under the share buy-back trading plan further reduced equity by $0.8 billion and $0.7 billion respectively while positive impact of the net income of $10.3 billion and from equity-based compensation of $1.1 billion were compensated by the dividend payments for 2013 of $6.8 billion and net purchases of treasury shares for $4.5 billion.

The Group's liquidity amounted to $13.9 billion at December 31, 2014, compared to $9.2 billion at December 31, 2013, and net debt decreased over the same period by $2.3 billion to $6.5 billion. The debt/equity ratio increased to 0.29:1 at December 31, 2014 compared to 0.24:1 at December 31, 2013.

SUMMARY OF EQUITY MOVEMENTS ATTRIBUTABLE TO NOVARTIS AG SHAREHOLDERS

	Number of outstanding shares (in millions)			Issued share capital and reserves attributable to Novartis AG shareholders		
	2014	2013	Change	2014	2013	Change
				$ m	$ m	$ m
Balance at beginning of year	**2,426.1**	**2,420.6**	**5.5**	**74,343**	**69,137**	**5,206**
Shares acquired to be held in Group Treasury	(46.8)	(33.3)	(13.5)	(4,057)	(2,464)	(1,593)
Shares acquired to be cancelled	(27.0)	(2.2)	(24.8)	(2,396)	(170)	(2,226)
Other share purchases	(5.4)	(4.8)	(0.6)	(473)	(356)	(117)
Increase in equity from exercise of options and employee transactions	41.4	34.3	7.1	2,400	1,691	709
Equity-based compensation	10.3	11.5	(1.2)	1,143	1,077	66
Treasury share repurchase commitment under a share buy-back trading plan				(658)		(658)
Dividends				(6,810)	(6,100)	(710)
Net income of the year attributable to shareholders of Novartis AG				10,210	9,175	1,035
Other comprehensive income attributable to shareholders of Novartis AG				(2,936)	2,363	(5,299)
Impact of change of ownership of consolidated entities					(10)	10
Balance at end of year	**2,398.6**	**2,426.1**	**(27.5)**	**70,766**	**74,343**	**(3,577)**

During 2014, 51.7 million treasury shares were delivered as a result of options being exercised and physical share deliveries related to employee participation programs (2013: 45.8 million shares). 52.2 million shares were repurchased on the SIX Swiss Exchange first trading line and from employees (shares previously granted under the respective programs). In 2013, shares repurchased via these channels amounted to 38.1 million treasury shares. In addition, Novartis repurchased 27.0 million shares on the second trading line in 2014 under the announced share buy-back of $5.0 billion spread over two years (2013: 2.2 million shares). With these transactions, the total number of shares outstanding was reduced by 27.5 million in 2014 (2013: increase of 5.5 million shares).

Treasury shares

At December 31, 2014, our holding of treasury shares amounted to 307.6 million shares or 11% of the total number of issued shares. Approximately 153 million treasury shares are held in entities that limit their availability for use.

At December 31, 2013, our holding of treasury shares amounted to 280.1 million shares or 10% of the total number of issued shares. Approximately 149 million treasury shares are held in entities that limit their availability for use.

At December 31, 2012, our holding of treasury shares amounted to 285.6 million shares or 11% of the total number of issued shares. Approximately 175 million treasury shares are held in entities that limit their availability for use.

Bonds

In February 2014, a $4.0 billion bond offering was completed in the United States consisting of two tranches; one 10-year bond of $2.15 billion with a coupon of 3.4% and one 30-year bond of $1.85 billion with a coupon of 4.4%. Further, a 4.125% US Dollar bond of $2 billion was repaid at maturity.

In October 2014, a EUR 1.2 billion bond offering was completed consisting of two tranches; one 7-year bond of EUR 0.6 billion with a coupon of 0.75% and one 12-year bond of EUR 0.6 billion with a coupon of 1.625%.

In April 2013, a 1.9% US Dollar bond of $2.0 billion was repaid.

In September 2012, a $2.0 billion bond offering was completed in the United States consisting of two tranches; one 10-year bond of $1.5 billion with a coupon of 2.4% and one 30-year bond of $0.5 billion with a coupon of 3.7%. Further, a 3.5% Swiss franc bond of CHF 0.7 billion was repaid in 2012.

Liquidity/Short-term Funding

We continuously track our liquidity position and asset/liability profile. This involves modeling cash flow maturity profiles based on both historical experiences and contractual expectations to project our liquidity requirements. We seek to preserve prudent liquidity and funding capabilities.

We are not aware of significant demands to change our level of liquidity needed to support our normal business activities. We make use of various borrowing facilities provided by several financial institutions. We also successfully issued various bonds in 2010, 2012 and 2014 and raised funds through our commercial paper programs. In addition, reverse repurchase agreements are contracted and Novartis has entered into credit support agreements with various banks for derivative transactions. We have no commitments from repurchase or securities lending transactions at the end of 2013. For details of the maturity profile of debt, currency and interest rate structure, see "Item 18. Financial Statements—Note 29".

5.C Research & Development, Patents and Licenses

Our R&D spending totaled $9.9 billion, $9.9 billion and $9.3 billion ($9.6 billion, $9.7 billion and $9.1 billion excluding impairments and amortization charges) for the years 2014, 2013 and 2012, respectively. Each of our divisions has its own R&D and patents policies. Our divisions have numerous products in various stages of development. For further information on these policies and these products in development, see "Item 4. Information on the Company—4.B Business Overview."

As described in the "Risk Factors" section and elsewhere in this Form 20-F, our drug development efforts are subject to the risks and uncertainties inherent in any new drug development program. Due to the risks and uncertainties involved in progressing through pre-clinical development and clinical trials, and the time and cost involved in obtaining regulatory approvals, among other factors, we cannot reasonably estimate the timing, completion dates, and costs, or range of costs, of our drug development program, or of the development of any particular development compound, see "Item 3. Key Information—3.D Risk Factors." In addition, for a description of the research and development process for the development of new drugs and our other products, and the regulatory process for their approval, see "Item 4. Information on the Company—4.B Business Overview."

5.D Trend Information

Please see "—5.A Operating Results—Factors Affecting Results of Operations" and "Item 4, Information on the Company—4.B Business Overview" for trend information.

5.E Off-Balance Sheet Arrangements

We have no unconsolidated special purpose financing or partnership entities or other off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources, that is material to investors, see also "Item 18. Financial Statements—note 28" and matters described in "Item 5.F Aggregate Contractual Obligations".

5.F Aggregate Contractual Obligations

The following table summarizes our contractual obligations and other commercial commitments at December 31, 2014 as well as the effect these obligations and commitments are expected to have on our liquidity and cash flow in future periods[(1)]:

	Payments due by period				
	Total	**Less than 1 year**	**2-3 years**	**4-5 years**	**After 5 years**
	$ m	**$ m**	**$ m**	**$ m**	**$ m**
Non-current financial debt (including current portion)	**16,788**	2,989	2,013	3,410	8,376
Operating leases	**2,772**	273	345	176	1,978
Unfunded pensions and other post-employment benefit plans	**2,358**	113	236	257	1,752
Research & Development					
—Unconditional commitments	**309**	93	120	73	23
—Potential milestone commitments	**2,207**	459	616	693	439
Purchase commitments					
—Property, plant & equipment	**826**	648	174	4	
Total contractual cash obligations	**25,260**	**4,575**	**3,504**	**4,613**	**12,568**

(1) Excluding commitments related to the transactions agreed upon with GSK on April 22, 2014.

We expect to fund the R&D and purchase commitments with internally generated resources.

For other contingencies, see "Item 4. Information on the Company—4.D Property, Plants and Equipment—Environmental Matters", "Item 8. Financial Information—8.A Consolidated Statements and Other Financial Information" and "Item 18. Financial Statements—note 20".

Item 6. Directors, Senior Management and Employees

6.A Directors and Senior Management

Board of Directors

Joerg Reinhardt, Ph.D.
Chairman of the Board of Directors
German, age 58

Function at Novartis AG Joerg Reinhardt, Ph.D., has been Chairman of the Board of Directors of Novartis AG since August 2013. He also serves as Chairman of the Research & Development Committee.

Other activities Mr. Reinhardt previously served as chairman of the board of management and the executive committee of Bayer HealthCare, Germany. Prior to that, he served as Chief Operating Officer of Novartis from 2008 to 2010, and as Head of the Vaccines and Diagnostics Division of Novartis from 2006 to 2008. He also served as Chairman of the Board of the Genomics Institute of the Novartis Research Foundation in the United States from 2000 to 2010, as a member of the supervisory board of MorphoSys AG in Germany from 2001 to 2004, and as a member of the board of directors of Lonza Group AG in Switzerland from 2012 to 2013.

Professional background Mr. Reinhardt graduated with a Ph.D. in pharmaceutical sciences from Saarland University in Germany. He joined Sandoz Pharma Ltd. in 1982 and held various positions including Head of Development. Following the merger that created Novartis in 1996, Mr. Reinhardt became Head of Preclinical Development and Project Management at Novartis, and assumed the position of Head of Pharmaceutical Development in 1999.

Key knowledge/experience *Leadership, global and industry experience*—former chairman of global healthcare company; former Chief Operating Officer of Novartis and former Chairman of Novartis research institution; former board member of leading biotechnology company; former board member of global supplier for pharmaceutical, healthcare and life sciences industries.

Ulrich Lehner, Ph.D.
Vice Chairman of the Board of Directors
German, age 68

Function at Novartis AG Ulrich Lehner, Ph.D., has been a member of the Board of Directors since 2002. He qualifies as an independent Non-Executive Director. He serves as Vice Chairman of the Board of Directors, and is a member of the Audit and Compliance Committee; the Compensation Committee; and the Governance, Nomination and Corporate Responsibilities Committee. The Board of Directors has appointed him as Audit Committee Financial Expert.

Other activities Mr. Lehner is a member of the shareholders' committee of Henkel AG & Co. KGaA, is chairman of the supervisory boards of Deutsche Telekom AG and ThyssenKrupp AG, and is a member of the supervisory boards of E.ON AG and Porsche Automobil Holding SE, all in Germany. He is also a member of the advisory board of Krombacher Brauerei, Germany.

Professional background Mr. Lehner graduated from the Darmstadt University of Technology, Germany, with degrees in economical and mechanical engineering in 1972, and with a doctorate degree in 1975. From 1975 to 1981, he was an auditor with KPMG Deutsche Treuhand-Gesellschaft AG in Düsseldorf. In 1981, he joined Henkel KGaA. After heading the controlling department of Fried. Krupp GmbH in Germany from 1983 to 1986, Mr. Lehner returned to Henkel as finance director. From 1991 to 1994, he headed Henkel Asia-Pacific Ltd. in Hong Kong, and from 1995 to 2000, he served as

executive vice president, finance and logistics, of Henkel KGaA. From 2000 to 2008, Mr. Lehner served as chairman of the management board of Henkel KGaA.

Key knowledge/experience *Leadership and global experience*—chairman of supervisory board of a global telecommunications and a technology company; former chairman of management board of global consumer goods company. *Industry experience*—member of committees of global companies in the energy, automotive, consumer goods, telecommunications and manufacturing technology areas.

Enrico Vanni, Ph.D.
Vice Chairman of the Board of Directors
Swiss, age 63

Function at Novartis AG Enrico Vanni, Ph.D., has been a member of the Board of Directors since 2011. He qualifies as an independent Non-Executive Director. He serves as Vice Chairman of the Board of Directors and as Chairman of the Compensation Committee. He is also a member of the Audit and Compliance Committee and the Research & Development Committee.

Other activities Since his retirement as director of McKinsey & Company in 2007, Mr. Vanni has been an independent consultant. He is currently a member of several boards of directors in industries from healthcare to private banking, including Advanced Oncotherapy plc in England, and several non-listed companies including Lombard Odier SA, Banque Privée BCP (Suisse) SA, Eclosion2, Jan-Autos Holding SA, and Denzler & Partners SA, all based in Switzerland.

Professional background Mr. Vanni holds an engineering degree in chemistry from the Federal Polytechnic School of Lausanne, Switzerland; a Ph.D. in chemistry from the University of Lausanne; and a Master of Business Administration from INSEAD in Fontainebleau, France. He began his career as a research engineer at International Business Machines Corp. in California, United States, and joined McKinsey & Company in Zurich in 1980. He managed the Geneva office for McKinsey from 1988 to 2004, and consulted for companies in the pharmaceutical, consumer and finance sectors. He led McKinsey's European pharmaceutical practice and served as a member of the firm's partner review committee prior to his retirement in 2007. As an independent consultant, Mr. Vanni has continued to support leaders of pharmaceutical and biotechnology companies on core strategic challenges facing the healthcare industry.

Key knowledge/experience *Global and industry experience*—senior consultant of global pharmaceutical/biotech and consumer goods companies, and financial institutions. *Science experience*—research engineer at technology company and manager of projects in global pharmaceutical R&D. *Leadership experience*—office management of global consultant company and leadership of its European pharmaceutical practice.

Dimitri Azar, M.D.
Member of the Board of Directors
American, age 55

Function at Novartis AG Dimitri Azar, M.D., has been a member of the Board of Directors since 2012. He qualifies as an independent Non-Executive Director and is a member of the Audit and Compliance Committee, as well as the Research & Development Committee.

Other activities Dr. Azar is dean of the College of Medicine and professor of ophthalmology, bioengineering and pharmacology at the University of Illinois at Chicago in the United States, where he formerly was head of the Department of Ophthalmology and Visual Sciences. He is a member of the American Ophthalmological Society and the Chicago Medical Society, and is on the board of trustees of the Chicago Ophthalmological Society and the Association of Research in Vision and Ophthalmology.

Professional background Dr. Azar began his career at the American University Medical Center, Beirut, Lebanon, and completed his fellowship and residency training at the Massachusetts Eye and Ear Infirmary at Harvard Medical School in the United States. His research on matrix-metalloproteinases in

corneal wound healing and angiogenesis has been funded by the US National Institutes of Health since 1993. Dr. Azar practiced at the Wilmer Ophthalmologic Institute at the Johns Hopkins Hospital School of Medicine, and returned to the Massachusetts Eye and Ear Infirmary as director of cornea and external disease. He became professor of ophthalmology with tenure at Harvard Medical School in 2003. Dr. Azar holds an Executive Master of Business Administration from the University of Chicago Booth School of Business.

Key knowledge/experience *Leadership, healthcare and education experience*—dean and professor at leading US university medical school. *Biomedical science experience*—federally funded clinician-scientist and research fellowship recipient.

Verena A. Briner, M.D.
Member of the Board of Directors
Swiss, age 63

Function at Novartis AG Verena A. Briner, M.D., has been a member of the Board of Directors since 2013. She qualifies as an independent Non-Executive Director and is a member of the Risk Committee.

Other activities Dr. Briner is professor of internal medicine at the University of Basel, and visiting professor at the University of Lucerne, both in Switzerland. She is chief medical officer and head of the Department of Medicine at the Lucerne Cantonal Hospital in Switzerland. Additionally, she is a member of several medical and ethical institutions and commissions, including the board of the Foundation for the Development of Internal Medicine in Europe, the senate of the Swiss Academy of Medical Sciences, and the journal of the inter-cantonal convention on high-specialized medicine (IVHSM), Switzerland. She also is a member and former president of the Swiss Society of Internal Medicine and a member of the board of trustees of Patientensicherheit Schweiz.

Professional background Dr. Briner graduated with an M.D. from the University of Basel in 1978, and has a specialized degree in internal medicine and nephrology from the Swiss Medical Association. She has received several prestigious scholarships and scientific grants, including the President's Grant of the Swiss Society of General Internal Medicine in 2011. Additionally, she is a fellow of the Royal College of Physicians, UK, and an honorary fellow of the American College of Physicians, the European Federation of Internal Medicine, the Polish Association of Internal Medicine, and the Swiss Society of General Internal Medicine.

Key knowledge/experience *Leadership and healthcare experience*—chief medical officer and department head at leading Swiss hospital; former president of Swiss medical society; member of various medical and ethical institutions and commissions. *Education experience*—professor and visiting professor at leading Swiss universities.

Srikant Datar, Ph.D.
Member of the Board of Directors
American, age 61

Function at Novartis AG Srikant Datar, Ph.D., has been a member of the Board of Directors since 2003. He qualifies as an independent Non-Executive Director. He is Chairman of the Audit and Compliance Committee, and a member of the Risk Committee and the Compensation Committee. The Board of Directors has appointed him as Audit Committee Financial Expert.

Other activities Mr. Datar is Arthur Lowes Dickinson Professor at the Graduate School of Business Administration at Harvard University. He is also a member of the boards of directors of ICF International Inc., Stryker Corp. and T-Mobile US, all in the United States.

Professional background Mr. Datar graduated with distinction in mathematics and economics from the University of Bombay, India, in 1973. He is a chartered accountant, and holds two master's degrees

and a doctorate from Stanford University. Mr. Datar has worked as an accountant and planner in industry, and as a professor at Carnegie Mellon University, Stanford University and Harvard University, all in the United States. His research interests are in the areas of cost management, measurement of productivity, new product development, time-based competition, incentives and performance evaluation. He is the author of many scientific publications and has received several academic awards and honors. Mr. Datar has advised and worked with numerous companies in research, development and training.

Key knowledge/experience *Leadership and education experience*—former senior associate dean and current professor at leading US university. *Global and industry experience*—board member of global professional services firm, leading global medical technology company, and major US telecommunications company.

Ann Fudge
Member of the Board of Directors
American, age 63

Function at Novartis AG Ann Fudge has been a member of the Board of Directors since 2008. She qualifies as an independent Non-Executive Director. She is a member of the Risk Committee; the Compensation Committee; and the Governance, Nomination and Corporate Responsibilities Committee.

Other activities Ms. Fudge serves on the boards of directors of General Electric Co. in the United States and Unilever NV, London and Rotterdam. She is a trustee of the New York-based Rockefeller Foundation, and is chair of the US Programs Advisory Panel of the Bill & Melinda Gates Foundation. Ms. Fudge is further a member of the Harvard University Corporation Committee on Finance. She is also on the board of the Council on Foreign Relations.

Professional background Ms. Fudge received her bachelor's degree from Simmons College and her Masters of Business Administration from Harvard University Graduate School of Business in the United States. She is former chairman and CEO of Young & Rubicam Brands, New York. Before that, she served as president of the Beverages, Desserts and Post divisions of Kraft Foods Inc. in the United States.

Key knowledge/experience *Leadership and marketing experience*—former chairman and CEO of global marketing communications company; former president of leading consumer products business unit. *Global and industry experience*—board member of global industrial/financial company and global consumer goods company.

Pierre Landolt, Ph.D.
Member of the Board of Directors
Swiss, age 67

Function at Novartis AG Pierre Landolt, Ph.D., has been a member of the Board of Directors since 1996. He qualifies as an independent Non-Executive Director and is Chairman of the Governance, Nomination and Corporate Responsibilities Committee.

Other activities Mr. Landolt is currently chairman of the Sandoz Family Foundation and oversees the development of the foundation in several investment fields. He is also chairman of the Swiss private bank Landolt & Cie SA. In Switzerland, he is chairman of Emasan AG and Vaucher Manufacture Fleurier SA, and vice chairman of Parmigiani Fleurier SA. He is a member of the board of EcoCarbone SAS, France, and Amazentis SA, Switzerland. He is also vice chairman of the Montreux Jazz Festival Foundation. In Brazil, Mr. Landolt serves as president of AxialPar Ltda. and Moco Agropecuaria Ltda., the Instituto Fazenda Tamanduá and the Instituto Estrela de Fomento ao Microcrédito.

Professional background Mr. Landolt graduated with a bachelor's degree in law from the University of Paris—Assas. From 1974 to 1976, he worked for Sandoz Brazil. In 1977, he acquired an agricultural estate in the semi-arid Northeast Region of Brazil, and within several years converted it into a model farm in

organic and biodynamic production. Since 1997, Mr. Landolt has been associate and president of AxialPar Ltda., Brazil, an investment company focused on sustainable development. In 2000, he co-founded EcoCarbone SAS, a company active in the design and development of carbon-sequestration processes. In 2007, he co-founded Amazentis SA, a startup company active in the convergence space of medication and nutrition. In 2011, Mr. Landolt received the title of Docteur des Sciences Économiques Honoris Causa from the University of Lausanne in Switzerland.

Key knowledge/experience *Banking and industry experience in international and emerging markets*—chairman of private bank; chairman and vice chairman of luxury goods companies; board member of agribusiness company. *Leadership and global experience*—chairman of large family investment holding.

Andreas von Planta, Ph.D.
Member of the Board of Directors
Swiss, age 59

Function at Novartis AG Andreas von Planta, Ph.D., has been a member of the Board of Directors since 2006. He qualifies as an independent Non-Executive Director. He is Chairman of the Risk Committee and a member of the Audit and Compliance Committee, as well as the Governance, Nomination and Corporate Responsibilities Committee.

Other activities Mr. von Planta is chairman of the Schweizerische National-Versicherungs-Gesellschaft AG and a board member of Helvetia Holding AG, both in Switzerland. He also is a board member of various Swiss subsidiaries of foreign companies and other non-listed Swiss companies. Additionally, he is chairman of the regulatory board of the SIX Swiss Exchange AG, and former chairman of the Geneva Association of Business Law.

Professional background Mr. von Planta holds lic. iur. and Ph.D. degrees from the University of Basel, Switzerland, and an LL.M. from Columbia University School of Law in the United States. He passed his bar examinations in Basel in 1982. Since 1983, he has lived in Geneva and worked for the law firm Lenz & Staehelin, where he became a partner in 1988. His areas of specialization include corporate law, corporate governance, corporate finance, company reorganizations, and mergers and acquisitions.

Key knowledge/experience *Leadership and global experience*—chairman of insurance company. *Industry experience*—partner of leading Swiss law firm.

Charles L. Sawyers, M.D.
Member of the Board of Directors
American, age 55

Function at Novartis AG Charles L. Sawyers, M.D., has been a member of the Board of Directors since 2013. He qualifies as an independent Non-Executive Director, and is a member of the Research & Development Committee.

Other activities In the United States, Dr. Sawyers is chairman of the Human Oncology and Pathogenesis Program at Memorial Sloan-Kettering Cancer Center, professor of medicine and of cell and developmental biology at the Weill Cornell Graduate School of Medical Sciences, and an investigator at the Howard Hughes Medical Institute. He serves on US President Barack Obama's National Cancer Advisory Board and is former president of the American Association of Cancer Research, as well as the American Society for Clinical Investigation. He also is a member of the US National Academy of Sciences and Institute of Medicine.

Professional background Dr. Sawyers received his M.D. from the Johns Hopkins School of Medicine in the United States, and worked at the Jonsson Comprehensive Cancer Center at the University of California, Los Angeles, for nearly 18 years before joining Memorial Sloan-Kettering in 2006. An internationally acclaimed cancer researcher, he co-developed the Novartis cancer drug Gleevec/Glivec,

and has received numerous honors and awards, including the Lasker-DeBakey Clinical Medical Research Award in 2009. Dr. Sawyers is a member of the Scientific Advisory Board of Agios Pharmaceuticals, Inc. in the United States.

Key knowledge/experience *Leadership, healthcare and science experience*—program chair at leading cancer treatment and research institution; member of US cancer advisory board; former president of scientific organization and medical honor society. *Education experience*—professor at leading US university.

William T. Winters
Member of the Board of Directors
British/American, age 53

Function at Novartis AG William T. Winters has been a member of the Board of Directors since 2013. He qualifies as an independent Non-Executive Director.

Other activities Mr. Winters is chairman and CEO of Renshaw Bay, an alternative asset management and advisory company based in London. He is a former member of the UK Independent Commission on Banking, and served as co-CEO of JPMorgan's investment banking business from 2003 to 2010.

Professional background Mr. Winters received his bachelor's degree from Colgate University and his Masters of Business Administration from the Wharton School at the University of Pennsylvania in the United States. He joined JPMorgan in 1983 and held management roles across several market areas and in corporate finance. Mr. Winters serves on the boards of Colgate University and the International Rescue Committee, both in the United States, and of Pension Insurance Corporation, the Young Vic Theatre and The Print Room, all in London. He was awarded the title of Commander of the Order of the British Empire (CBE) in 2013.

Key knowledge/experience *Leadership and global experience*—chairman and CEO of alternative asset management and advisory company; former co-CEO of investment banking at global financial services firm. *Education experience*—board member of leading US university.

Honorary Chairmen

Alex Krauer, Ph.D

Daniel Vasella, M.D.

Corporate Secretary

Charlotte Pamer-Wieser, Ph.D.

Executive Committee

Joseph Jimenez
Chief Executive Officer (CEO) of Novartis
American, age 55

Joseph Jimenez has been Chief Executive Officer (CEO) of Novartis since 2010. Mr. Jimenez is responsible for leading the company's diversified healthcare portfolio of leading businesses in innovative pharmaceuticals, eye care, generics, vaccines and OTC.

Previously, Mr. Jimenez served as Division Head, Novartis Pharmaceuticals. He led the transformation of the pharmaceuticals portfolio to balance mass market and specialty products, and significantly increased the percentage of sales from newly launched products.

Mr. Jimenez joined Novartis in 2007 as Division Head, Novartis Consumer Health. Previously, he served as president and CEO of the North America business for the H.J. Heinz Company and as president and CEO of Heinz in Europe from 2002 to 2006. Prior to joining Novartis, he was a nonexecutive director of AstraZeneca PLC, United Kingdom, from 2002 to 2007. He also was an adviser for the private equity organization Blackstone Group in the United States.

Mr. Jimenez is a member of the board of directors of Colgate-Palmolive Company, New York. He graduated in 1982 with a bachelor's degree from Stanford University and in 1984 with a Master of Business Administration from the University of California, Berkeley, both in the United States.

Steven Baert

Head of Human Resources of Novartis
Belgian, age 40

Steven Baert has been Head of Human Resources of Novartis since February 26, 2014. He is a member of the Executive Committee of Novartis.

Mr. Baert joined Novartis in 2006 as Head of Human Resources Global Functions in Switzerland. He has held several senior HR roles, including Head of Human Resources for Emerging Growth Markets and Global Head, Human Resources, Oncology. Mr. Baert also served as Head of Human Resources, US and Canada, for Novartis Pharmaceuticals Corporation.

Prior to joining Novartis, Mr. Baert held positions in human resources for Bristol-Myers Squibb and Unilever.

Mr. Baert holds a Master of Business Administration from the Vlerick Business School and a Master in Law from the Katholieke Universiteit Leuven. He has a Bachelor in Law from the Katholieke Universiteit Brussels.

Felix R. Ehrat, Ph.D.

Group General Counsel of Novartis
Swiss, age 57

Felix R. Ehrat, Ph.D., has been Group General Counsel since October 2011. He is a member of the Executive Committee of Novartis.

Mr. Ehrat is a leading practitioner of corporate, banking, and mergers and acquisitions law, as well as an expert in corporate governance and arbitration. He started his career as an associate with Baer & Karrer Ltd. in Zurich in 1987, became partner in 1992, and advanced to senior partner (2003 to 2011) and executive chairman of the board (2007 to 2011) of the firm. Mr. Ehrat is chairman of Globalance Bank AG in Switzerland, and a board member of Geberit AG, economiesuisse (SwissBusiness Federation), SwissHoldings (Federation of Industrial and Service Groups in Switzerland), and avenir suisse (think tank for economic and social issues). Previously, he was, among other things, chairman and board member of several listed and non-listed companies.

Mr. Ehrat was admitted to the Zurich bar in 1985 and received his doctorate of law from the University of Zurich in 1990. In 1986, he completed an L.L.M. at McGeorge School of Law in the United States. Some of his past memberships include the International Bar Association, where he was co-chair of the Committee on Corporate and M&A Law from 2007 to 2008, and Association Internationale des Jeunes Avocats (AIJA), where he was president from 1998 to 1999.

David Epstein

Division Head, Novartis Pharmaceuticals
American, age 53

David Epstein has been Division Head, Novartis Pharmaceuticals, since 2010. He is a member of the Executive Committee of Novartis.

Since taking this role Mr. Epstein has set a course for Novartis Pharmaceuticals to develop into the world's best pharmaceutical business. He previously served as Head of Novartis Oncology, building the Oncology business from start-up to number two in the world through six new drug approvals and more than 10 indication expansions.

Before joining Novartis, Mr. Epstein was an associate in the strategy practice of the consulting firm Booz Allen Hamilton in the United States. He joined Sandoz, a Novartis predecessor company, in 1989 and held various leadership positions of increasing responsibility including Chief Operating Officer of Novartis Pharmaceuticals Corporation in the United States and Global Head of Novartis Specialty Medicines.

Mr. Epstein received a bachelor's degree in pharmacy, with honors, from the Ernest Mario School of Pharmacy at Rutgers, The State University of New Jersey, in 1984. He received a Master of Business Administration in finance and marketing from New York's Columbia University Graduate School of Business in 1987.

Mark C. Fishman, M.D.

President of the Novartis Institutes for BioMedical Research (NIBR)
American, age 63

Mark C. Fishman, M.D., has been President of the Novartis Institutes for BioMedical Research (NIBR) since 2002. He is a member of the Executive Committee of Novartis.

Before joining Novartis in 2002, Dr. Fishman was chief of cardiology and director of the Cardiovascular Research Center at Massachusetts General Hospital, and was professor of medicine at Harvard Medical School, both in the United States. Dr. Fishman completed his internal medicine residency, chief residency and cardiology training at Massachusetts General Hospital.

Dr. Fishman graduated with a bachelor's degree from Yale College in 1972 and with an M.D. from Harvard Medical School in 1976. He has been honored with many awards and distinguished lectureships, and serves on the council of the Institute of Medicine of the National Academies in the United States. Additionally, he is a fellow of the American Academy of Arts and Sciences, also in the United States.

Richard Francis

Division Head, Sandoz
British, age 46

Richard Francis has been Division Head of Sandoz since May 1, 2014. He is a member of the Executive Committee of Novartis.

Mr. Francis joined Novartis from Biogen Idec, where he held global and country leadership positions during his 13-year career with the company. Most recently, Mr. Francis was the senior vice president of the company's US commercial organization. From 1998 to 2001, Mr. Francis was at Sanofi in the United Kingdom, where he held various marketing roles across the company's urology, analgesics and cardiovascular products. He also has held sales and marketing positions at Lorex Synthelabo and Wyeth.

Mr. Francis holds a B.A. in economics from the Manchester Metropolitan University, England.

Jeff George

Division Head, Alcon
American, age 41

Jeff George has been Division Head of Alcon since May 1, 2014. He is a member of the Executive Committee of Novartis.

For more than five years prior to joining Alcon, Mr. George led Sandoz, the generics division of Novartis and the world's second-largest generics company with more than 26000 associates across 164 countries. Prior to Sandoz, Mr. George was Head of Emerging Markets for the Middle East, Africa, Southeast Asia and CIS for Novartis Pharmaceuticals.

Mr. George joined Novartis in January 2007 as Head of Commercial Operations for Western and Eastern Europe for Novartis Vaccines. Before joining Novartis, Mr. George was senior director of strategic planning and business development at Gap Inc., in San Francisco. Between 2001 and 2004, he worked at McKinsey & Company, also in San Francisco, where he was an engagement manager.

Mr. George received a Master of Business Administration from Harvard University in 2001. He graduated in 1999 with a master's degree from The Johns Hopkins University's School of Advanced International Studies, where he studied international economics and emerging markets political economy. In 1996, he received his bachelor's degree, magna cum laude, in international relations from Carleton College in Minnesota, United States.

George Gunn, MRCVS

Division Head, Novartis Animal Health
British, age 64

George Gunn has been Division Head, Novartis Animal Health, since March 2011. He is a member of the Executive Committee of Novartis.

Before joining Novartis, Mr. Gunn was president of Pharmacia Animal Health, based in the United States. Previously, he spent more than 15 years in positions of increasing responsibility at healthcare companies. He worked as a veterinary surgeon for nine years before joining the industry.

Mr. Gunn joined Novartis in 2003 as Head of Novartis Animal Health, North America. In January 2004, he assumed his position as Head of the Animal Health Business Unit. In addition to this role, he was Division Head, Novartis Consumer Health, from 2008 to 2011 and he served as Head of Corporate Responsibility from 2011 to 2014.

Mr. Gunn graduated with a bachelor of veterinary medicine and surgery degree from the Royal (Dick) School of Veterinary Studies in the United Kingdom in 1973. He graduated with a diploma in veterinary state medicine from the same school in 1978. In 2008, he received an honorary doctorate in veterinary medicine and surgery from the University of Edinburgh.

Harry Kirsch

Chief Financial Officer (CFO) of Novartis
German, age 49

Harry Kirsch has been Chief Financial Officer (CFO) of Novartis since May 1, 2013. He is a member of the Executive Committee of Novartis.

Mr. Kirsch joined Novartis in 2003 and, prior to his current position, served as CFO of the company's Pharmaceuticals Division. Under his leadership, the division's core operating income margin increased, in constant currencies, every quarter of 2011 and 2012 despite patent expiration. At Novartis, he also served as CFO of Pharma Europe, and as Head of Business Planning & Analysis and Financial Operations for the Pharmaceuticals Division. Mr. Kirsch joined Novartis from Procter & Gamble (P&G) in the United

States, where he was CFO of P&G's global pharmaceuticals business. Prior to that, he held finance positions in different categories of P&G's consumer goods business, technical operations, and Global Business Services organization.

Mr. Kirsch studied industrial engineering and economics at the University of Karlsruhe in Germany ("Diplom-Wirtschaftsingenieur").

Brian McNamara

Division Head, Novartis OTC
American, age 48

Brian McNamara has been Division Head, Novartis OTC, since February 2012. He is a member of the Executive Committee of Novartis.

Prior to this role, Mr. McNamara served as President, Americas Region, for Novartis OTC. Since joining Novartis OTC in 2004 as Senior Vice President and General Manager of Novartis OTC North America, he has worked on a number of strategic initiatives. He also served as President of Novartis OTC Europe from 2007 until 2010.

Mr. McNamara began his career at the Procter & Gamble Company, Cincinnati, United States, where he gained extensive experience in consumer and brand marketing, product supply, and customer leadership. He previously was on the board of directors and executive committee of the Consumer Healthcare Products Association in the United States, and was a board member of the Association of the European Self-Medication Industry, where he served as chairman of the Economic Affairs Committee.

Mr. McNamara received a Master of Business Administration in finance from the University of Cincinnati and a bachelor's degree in electrical engineering from Union College, both in the United States.

Andrin Oswald, M.D.

Division Head, Novartis Vaccines
Swiss, age 43

Andrin Oswald, M.D., has been Division Head, Novartis Vaccines, since 2008. He is a member of the Executive Committee of Novartis. In September 2013, Dr. Oswald also became Chairman of the Board of the Novartis Foundation for Sustainable Development.

Previously, Dr. Oswald was CEO of Speedel Holding AG and Global Head of Pharmaceutical Development Franchises in the Novartis Pharmaceuticals Division, both in Switzerland. Dr. Oswald joined Novartis in 2005 as Assistant to the Chairman and CEO. Before his appointment as Head of Development Franchises, he served as Head of the Country Pharmaceuticals Organization (CPO) and Country President for Novartis in South Korea.

Dr. Oswald joined Novartis from McKinsey & Company, Switzerland, where he was an associate principal. He is a board member of the Global Health Investment Corporation (GHIC) and an Investment Committee member of the Global Health Investment Fund (GHIF). Between 2002 and 2003, he also served as a delegate of the International Committee of the Red Cross (ICRC) to Nepal. Dr. Oswald holds a doctorate in medicine from the University of Geneva.

André Wyss

Global Head, Novartis Business Services and Country President for Switzerland
Swiss, age 47

André Wyss has been Global Head of Novartis Business Services (NBS) since May 1, 2014. On July 1, 2014, he also was appointed Country President for Switzerland. He is a member of the Executive Committee of Novartis.

Mr. Wyss previously served as US Country Head and President of Novartis Pharmaceuticals Corporation. Prior to that, he served as Head of the Pharmaceuticals Division Region Asia-Pacific, Middle East and African Countries (AMAC). Before leading AMAC, he served as Group Emerging Markets Head, and as Country President and Head of Pharmaceuticals, Greece.

Mr. Wyss received a graduate degree in economics from the School of Economics and Business Administration (HWV) in Switzerland in 1995.

Secretary

Bruno Heynen

6.B Compensation

DEAR SHAREHOLDER,

As Chairman of the Compensation Committee of the Board of Directors, I am pleased to share with you the 2014 Compensation Report of Novartis AG.

At Novartis, our mission is to care and cure. We make innovative products to treat diseases, ease suffering and enhance patients' quality of life. The company also wants to provide superior returns to its shareholders and to be an employer of choice. The Novartis Executive Committee compensation system was introduced in 2014 to provide better alignment with business strategy, shareholder interests and corporate governance best practice. The system has an emphasis on long-term performance and equity-based compensation. The Compensation Committee is confident that this system allows Novartis to attract and retain the caliber of talent needed to reach its vision to be the most respected and successful healthcare company. The Committee received strong support for this system from shareholders during the consultation process.

2014 Company and Executive Committee Performance

2014 was a very successful year. Novartis completed a major portfolio review and focused the company on leading businesses with innovation power and global scale in pharmaceuticals, eye care and generics. Overall, the company exceeded its financial targets for the year, while being just slightly below its sales target. The Group significantly exceeded its profitability and cash flow targets. Novartis Business Services (NBS) was launched and is designed to enhance profitability by harmonizing high-quality services at lower costs across the Group and divisions. Novartis also had an outstanding year in innovation, advancing major products to address unmet medical needs. The company achieved a total shareholder return of 34% in CHF and 20% in US dollars, and is one of the worlds' top 20 companies in market capitalization.

2014 CEO compensation

Following the introduction of the new compensation system, for 2014 the CEO was awarded total compensation of CHF 12,648,490. This amount included an Annual Incentive of CHF 4,018,084 (representing 130% of target) based on his, and the company's performance, as mentioned above. 50% of

the Annual Incentive was delivered in cash, and 50% was delivered in restricted share units, which will have a three year vesting period. It also included long-term incentive grants of CHF 6,181,504, which will be subject to performance conditions for the 2014-2016 cycle.

Compensation Systems

Novartis strives to continually adapt to a changing environment and to be best in class with regard to our compensation systems and practices. Since the 2014 AGM, Novartis has continued to interact with shareholders to jointly discuss any relevant changes. The Board and the management are confident that the Executive Committee compensation system rewards performance in a balanced and sustainable way without encouraging excessive risk taking. The company will make limited changes in 2015 to the performance measures and payout matrix for the Annual Incentive, including the updated Novartis Values and Behaviors. These changes are explained below in this report. See ‘‘—2015 Executive Committee Compensation System, Annual Incentive.

The Board Compensation system and fee structure will remain in place for 2015, although from the 2015 AGM the Chairman of the Board will voluntarily no longer receive company contributions to any pension.

2015 AGM

This year the Committee continued to prepare for the implementation of the new Swiss law related to the Minder Initiative, requiring Swiss listed companies to hold separate binding votes on Board and Executive Committee compensation at the 2015 AGM. As a result, shareholders will be asked to approve the following:

– Total maximum amount of Board compensation from the 2015 AGM to the 2016 AGM

– Total maximum amount of Executive Committee compensation for the 2016 financial year

Shareholders will also be asked to endorse this Compensation Report in an advisory vote.

In response to your feedback, you will find a simplified Compensation Report, including a comprehensive management summary.

On behalf of Novartis and the Compensation Committee, I would like to thank you for your continued support and feedback, which I consider extremely valuable in driving improvements in our compensation systems and practices. I invite you to send your comments to me at the following email address: investor.relations@novartis.com.

Respectfully,

Enrico Vanni, Ph.D.

Chairman of the Compensation Committee

COMPENSATION REPORT AT A GLANCE

Executive Committee Compensation

2014 Executive Committee Compensation System (see "—2014 Executive Committee Compensation System" below)

The following components are included:

	Fixed compensation and benefits		Variable compensation		
	Annual base compensation	**Pension and other benefits**	**Annual Incentive (AI)**	**Long-Term Performance Plan (LTPP)**	**Long-Term Relative Performance Plan (LTRPP)**
Purpose	Reflects the associates' responsibilities, job characteristics, experience and skill set	Establishes a level of security for associates and their dependents tailored to local market practice and regulations	Rewards performance against key short-term targets and values & behaviors	Rewards long-term shareholder value creation and long-term innovation	Rewards relative total shareholder return
Performance period	n/a	n/a	1 year (2014)	3 years (2014-2016)	3 years (2014-2016)
Performance measures	n/a	n/a	Based on a payout matrix made up of: —Individual balanced scorecard, including financial targets and individual objectives —Assessed Novartis Values and Behaviors	3 year forward looking targets—75% Novartis Group Cash Value Added (NCVA) —25% divisional Long-Term innovation milestones	3 year relative Total Shareholder Return (TSR) versus our peer group of 12 healthcare companies[1]
Delivery	Cash	Country specific	50% cash 50% deferred equity[2] (3 year holding of restricted shares/ restricted share units)	Equity (includes dividend equivalents)	Equity (includes dividend equivalents)

[1] The 2014 companies in our peer group consists of Abbott, AbbVie, Amgen, AstraZeneca, Bristol-Myers Squibb, Eli Lilly & Company, GlaxoSmithKline, Johnson & Johnson, Merck & Co., Pfizer, Roche and Sanofi.

[2] Executive Committee members may elect to receive more of their Annual Incentive in shares instead of cash.

						Total Variable Compensation
CEO variable opportunity as % of base salary	n/a	n/a	Target: 150% (range 0%-200% of target)	Target: 200% (range 0%-200% of target)	Target: 100% (range 0%-200% of target)	Target: 450% (range 0%-200% of target)
Executive Committee variable opportunity as % of base salary (excluding CEO)	n/a	n/a	Target: 90%-120% (range 0%-200% of target)	Target: 140%-190% (range 0%-200% of target)	Target: 30%-90% (range 0%-200% of target)	Target: 260%-400% (range 0%-200% of target)

2014 Executive Committee Compensation (see "—2014 Executive Committee Compensation" below)

							Total Compensation
2014 CEO compensation paid or granted (grants under long-term plans are reported at target) . .	CHF2,060,500	CHF 388,402	CHF 4,018,084	CHF 4,121,003	CHF2,060,501	CHF12,648,490
2014 Executive Committee compensation paid or granted (excluding CEO / grants under long-term plans are reported at target) . .	CHF8,917,856	CHF13,874,257	CHF14,110,638	CHF14,883,817	CHF4,753,376	CHF56,539,944
Total						**CHF69,188,434**[2]

(1) It includes compensation for loss of entitlements with one member's previous employer in 2014, and the compensation of the members who stepped down from the Executive Committee part-way through the financial year for the period from the date they stepped down to December 31 of the same year.

(2) In compliance with the Minder Ordinance, it includes an amount of mandatory employer social security contributions of CHF 76,534. This amount provides a right to the maximum future insured government benefit for the members. This is out of a mandatory total of CHF 2,980,528 paid by Novartis to both Swiss and US governmental social security systems.

2015 Executive Committee Compensation System (see "—2015 Executive Committee Compensation System" below)

Compensation opportunity

As for all associates, members of the Executive Committee may have received a merit increase, based on their 2014 performance, and adjustment to benchmark for newer members. The CEO base salary for 2015 will remain unchanged at CHF 2,060,500. His total target variable compensation opportunity remains unchanged at 450% of base salary under all other elements of the compensation system.

Performance measures

Annual Incentive

The Annual Incentive continues to be based on a payout matrix made up of a balanced scorecard and assessed Novartis Values and Behaviors.

Changes have been made to the measures under the balanced scorecard, the Novartis Values and Behaviors and the payout matrix (see "—2015 Executive Committee Compensation System—Payout Matrix" below).

Long-Term Incentives

No changes have been made to the performance measures under either the Long-Term Performance Plan or the Long-Term Relative Performance Plan.

Board Compensation

2014 Board Compensation System (see "—2014 Board Compensation System" below)

Delivery: 50% cash, 50% shares

	Annual fee
(CHF)	
Chairman of the Board	3,800,000[1]
Board membership	300,000
Vice Chairman	50,000
Chairman of Audit and Compliance Committee	120,000
Chairman of the following Committees:	
—Compensation Committee	
—Governance, Nomination and Corporate Responsibilities Committee	
—Risk Committee	
—Research and Development Committee[2]	60,000
Membership of Audit and Compliance Committee	60,000
Membership of the following Committees:	
—Compensation Committee	
—Governance, Nomination and Corporate Responsibilities Committee	
—Risk Committee	
—Research and Development Committee	30,000

(1) Dr. Reinhardt also received company occupational pension contributions of CHF 144,816 for 2014, which will cease to be paid as of the 2015 AGM and payment for loss of other entitlements with his previous employer of EUR 748,000. The Chairman receives no additional Committee fees for chairing the Research and Development Committee.

(2) The Chairman receives no additional Committee fees for chairing the Research and Development Committee.

2014 Board Compensation (see "—2014 Board Compensation" below)

Amounts earned during the 2014 financial year

	Cash	Equity	Other benefits[1]	Total
(CHF)				
Chairman Dr. Joerg Reinhardt	2,058,334	1,741,666	157,844	3,957,844
Other Board members	1,775,002	2,695,835	336,383	4,807,220
				8,765,064[2]

(1) This amount includes an amount of CHF 27,771 for estimated mandatory employer contributions payable by Novartis to governmental social security systems. This amount is out of estimated mandatory total employer contributions of CHF 359,890, and provides a right to the maximum future insured government pension benefit for the Board member. No occupational pension contributions to be provided to the Chairman from the 2015 AGM onwards.

(2) Please see "2014 Board Compensation" for a reconciliation between the amount reported in this table, and the amount of endorsed by shareholders at the 2014 AGM to be used to compensate the Board members for the period from the 2014 AGM to the 2015 AGM. Novartis has respected and paid within the maximum amount endorsed by shareholders.

Compensation Governance

Governance and risk management (see "—Compensation Governance" below)

Decision making authorities with regard to compensation, within the parameters set by the shareholder's meeting

Decision on	Authority
Compensation of Chairman and other Board members	Board of Directors
Compensation of the Chief Executive Officer	Board of Directors
Compensation of the Executive Committee members (excluding the CEO)	Compensation Committee

Executive Committee Compensation Risk Management Principles

- Rigorous performance management process
- Balanced mix of short-term and long-term variable compensation elements
- Matrix approach to performance evaluation under the Annual Incentive, including an individual balanced scorecard and assessed Novartis Values and Behaviors
- Performance-vesting long-term incentives only, with three-year overlapping cycles
- All variable compensation is capped at 200% of target
- Contractual notice period of 12 months
- Post-contractual non-compete limited to a maximum of 12 months (annual base compensation and annual incentive of the prior year only)
- No severance payments or change of control clauses
- Clawback principles apply to all elements of variable compensation
- Share ownership requirements; no hedging or pledging of Novartis share ownership position (this element applies to Board members and Executive Committee members)

EXECUTIVE COMMITTEE COMPENSATION PHILOSOPHY & PRINCIPLES

Novartis Compensation Philosophy

The compensation philosophy aims to ensure that the Executive Committee is rewarded according to their success in implementing the company strategy and their contribution to company performance. The Executive Committee compensation system is designed in line with the following key elements:

Pay for performance	Variable compensation is tied directly to the achievement of strategic Company targets
Shareholder alignment	A significant part of our incentives are equity-based. Also, one Long-Term Incentive rewards on the basis of relative Total Shareholder Return
Balanced rewards to create sustainable value	Mix of targets based on financial metrics, innovation, individual objectives, values and behaviors, and performance versus competitors
Business ethics	The Novartis Values and Behaviors are an integral part of our compensation system
Competitive compensation	Compensation competitive to relevant benchmarks ensures we are able to attract and retain the most talented global Executive Committee members

Alignment with Company Strategy

Novartis' strategy is to deliver better outcomes for patients through science-based innovation. We aim to lead in growing areas of healthcare. In order to align the compensation system with this strategy, the Board of Directors determines specific, measurable and time-bound performance metrics, including financial metrics such as sales, profit and cash flow, as well as non-financial metrics, which indicate the success of its implementation. The Board then sets short-term and long-term targets for each of these performance metrics and compensates the Executive Committee according to the extent to which the targets are achieved. In line with the company focus on science-based innovation, the Board sets a number of specific targets for each division to fulfill within specific timeframes. In line with the company's aim to lead in growing areas of healthcare, Novartis has now planned to focus its portfolio to have three market-leading divisions in innovative pharmaceuticals, eye care and generics. Finally, in order to ensure that Novartis is a high-performing organization over the long term, the Board also sets targets in areas such as quality, talent, integrity and reputation, which are reinforced by the Novartis Values and Behaviors.

Executive Committee Compensation Benchmarking

To attract and retain key talent, it is important for us to offer competitive compensation levels. Executives meeting their objectives are generally awarded target compensation at a level comparable to the median level of similar roles within the benchmark companies (see "—Benchmark Companies" below). In the event of under- or over-performance, the actual compensation may be lower or higher than the benchmark median.

Whilst benchmarking information regarding executive pay is considered by the Compensation Committee, any decisions on compensation are ultimately based on the specific business needs of Novartis and the performance of the individual.

The Compensation Committee reviews the compensation of the CEO and of the members of the Executive Committee annually in comparison to the relevant compensation level of similar positions at peer companies. For this purpose, the Committee uses benchmark data from publicly available sources, as well as reputable market data providers. All data is reviewed and evaluated by the Compensation Committee's independent advisor, who also provides independent research and advice regarding the compensation of the CEO and other members of the Executive Committee.

For the CEO and the members of the Executive Committee, the company benchmarks against global competitors in the healthcare industry with similar business models, size and needs for talent and skills. This peer group may change over time in line with the evolution of the competitive environment in the healthcare industry.

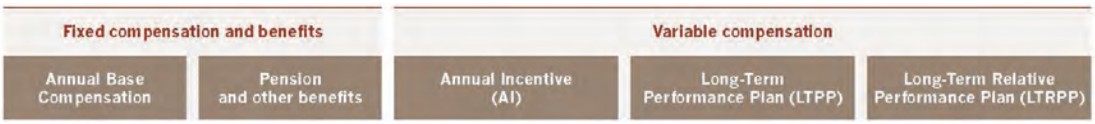
BENCHMARK COMPANIES

Abbott	AbbVie	Amgen
AstraZeneca	Bristol-Myers Squibb	Eli Lilly & Company
GlaxoSmithKline	Johnson & Johnson	Merck & Co.
Pfizer	Roche	Sanofi

Within this peer group, Novartis is among the largest in key dimensions including market capitalization, sales and operating income.

2014 EXECUTIVE COMMITTEE COMPENSATION SYSTEM

The 2014 Executive Committee compensation system consists of the following components:



Fixed Compensation and Benefits

Annual Base Compensation

The level of base compensation reflects each associate's key areas of responsibilities, job characteristics, experience and skill sets. It is paid in cash, typically monthly.

Base compensation is reviewed annually, and any increase reflects both merit based on performance, as well as market movements.

Pension and Other Benefits

The primary purpose of pension and insurance plans is to establish a level of security for associates and their dependents with respect to age, health, disability and death. The level and scope of pension and insurance benefits provided is country-specific, influenced by local market practice and regulations.

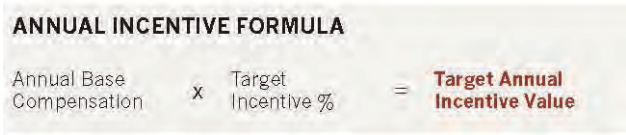
Company policy is to change from defined-benefit pension plans to defined-contribution pension plans. All major plans have now been aligned with this policy as far as reasonably practicable. See also "Item 18. Financial Statements—Note 25."

Novartis may provide other benefits in a specific country according to local market practice and regulations, such as a company car, tax and financial planning services. Executive Committee members who have been transferred on an international assignment also receive benefits (such as tax equalization) in line with the company's international assignment policies.

Variable Compensation

Annual Incentive

For the Annual Incentive of the CEO and Executive Committee members, a target incentive is defined as a percentage of base compensation at the beginning of each performance year. The target incentive is 150% of base compensation for the CEO, and ranges from 90% to 120% for other Executive Committee members, and is paid half in cash and half in shares deferred for three years. The formula for the target Annual Incentive is outlined below:



Performance measures

The Annual Incentive is based on a payout matrix comprising of two elements, a balanced scorecard and the Novartis Values and Behaviors, which are described in more detail below.

Balanced Scorecard

The first element used to determine the payout of the Annual Incentive is a balanced scorecard, within which, Group or divisional Financial and Innovation targets are weighted 60% and Individual objectives are weighted 40%. For more details on the target setting and performance management process, please refer to section "Compensation Governance, Executive Committee performance management process."

Group or divisional Financial and Innovation targets

Within the Group or divisional Financial and Innovation targets, each measure such as sales or net income is weighted individually. The CEO and function heads share the same Group Financial and Innovation targets. In place of the Group targets, division heads have division targets which include division sales, division operating income, division free cash flow as a percentage of sales, division market share of peers and division innovation targets. The Board sets the Group and divisional financial and innovation targets at the start of each performance year in constant currencies and evaluates achievement against those targets at the end of that year. The newly established Research and Development Committee, which became operational in 2014, assists the Board in reviewing innovation targets and achievements.

Individual Objectives

The individual objectives differ for each Executive Committee member depending on their responsibility, and may include additional financial and non-financial targets. Additional financial targets examples are implementation of growth, productivity and development initiatives. Non-financial targets may include leadership and people management, workforce diversity, quality, social initiatives such as access to medicines, and ethical business practices.

By way of illustration, the balanced scorecard measures used for the CEO in 2014 are set out below:

2014 BALANCED SCORECARD MEASURES USED FOR THE CEO

Performance measures	Weight	Breakdown of performance measures
Group Financial and Innovation Targets	60%	Group net sales Group net income Group free cash flow as % of sales Corporate net result Weighted average of division innovation
CEO Individual Objectives . .	40%	Specific additional financial targets e.g. EPS Innovation and growth targets Portfolio review Organization, quality and customer satisfaction Cross-divisional synergies
Overall total	**100%**	

Values and Behaviors

The second element used to determine the payout of the Annual Incentive ensures that the associate's performance is achieved in line with the highest standards of business conduct, as outlined in the Novartis Values and Behaviors. Novartis requires Executive Committee members to be action-oriented and full of energy to face challenging situations, to assign the highest priority to customer satisfaction and to commit to honesty in every facet of behavior, demonstrating strong ethical and legal conduct. Novartis leaders are expected to live up to these behaviors on a daily basis, and to align and energize other associates to do the same. The Values and Behaviors are an essential element in the annual assessment of Executive Committee members and have been updated for the 2015 Annual Incentive onwards (see "—2015 Executive Committee Compensation System" below).

Performance evaluation and payout determination

Following a thorough review of the two elements that compose the Annual Incentive, including performance against the balanced scorecard objectives and an assessment against the Novartis Values and Behaviors, a rating will be assigned from 1 to 3 for each element.

The following payout matrix shows how the Annual Incentive performance factor is derived using a combination of performance against the balanced scorecard and demonstration of the Novartis Values and Behaviors. The Compensation Committee determines the final payout factor taking into account the ranges shown. Payouts are capped at 200% of target.

2014 ANNUAL INCENTIVE PAYOUT MATRIX

			% Payout		
Performance vs. Balanced Scorecard	Exceeded Expectations	3	70–100%	130–160%	170–200%
	Fully met Expectations	2	50–80%	90–120%	130–160%
	Partially met Expectations	1	0%	0–70%	60–90%
			1	2	3
			Partially met Ex-pectations	Fully met Ex-pectations	Exeeded Ex-pectations
			Novartis Values and Behaviors Assessment		

The payout matrix will be updated for the 2015 Annual Incentive onwards to equally recognize performance against the objectives in the balanced scorecard, and the assessment against the Novartis Values and Behaviors (see "—2015 Executive Committee Compensation System below").

Form of the award

The Annual Incentive is paid 50% in cash in March of the year following the performance period, and 50% in Novartis shares (or Restricted Share Units (RSUs)) that are deferred and restricted for three years. Each restricted share is entitled to voting rights and payment of dividends during the vesting period. Each RSU is equivalent in value to one Novartis share and is converted into one share at the vesting date. RSUs under this plan do not carry any dividend, dividend equivalent or voting rights.

If a participant leaves Novartis due to voluntary resignation or misconduct, unvested shares (and RSUs) are forfeited. The Board and Compensation Committee retain accountability for ensuring that rules are applied correctly, and for determining whether a different treatment should apply in exceptional circumstances. This is necessary to ensure that the treatment of any award in the event of cessation of employment is appropriate.

Executives may choose to receive some or the entire cash portion of their Annual Incentive in Novartis shares or American Depositary Receipts (ADRs (US only)) that shall not be subject to conditions. In the United States, awards may also be delivered in cash under the US deferred compensation plan.

Delivery of equity at vesting

Following the vesting period, settlement is made in unrestricted Novartis shares or ADRs.

Long-Term incentives

Novartis operates two Long-Term Incentives (the Long-Term Performance Plan, and the Long-Term Relative Performance Plan) for the Executive Committee, which function in an identical way except for the performance conditions applied.

Grant of Long-Term Incentives

At the beginning of every performance period, Executive Committee members are granted a target number of Performance Share Units (PSUs) under each of the long-term incentives according to the following formula:

STEP 1	Annual Base Compensation	x	Target Incentive %	=	Grant Value
STEP 2	Grant Value	/	Share Price	=	Target Number of PSUs

Vesting of Long-Term Incentives

At the end of the three-year performance period, the Compensation Committee adjusts the number of PSUs realized based on actual performance against target.

LONG-TERM INCENTIVE PAYOUT FORMULA

Target number of PSUs	X	Performance Factor	=	**Realized PSUs** + dividend equivalents

Each realized PSU is converted into one Novartis share at the vesting date. PSUs do not carry voting rights, but do carry dividend equivalents that are reinvested in additional PSUs and paid at vesting to the extent that performance conditions have been met. In the United States, awards may also be delivered in cash under the US deferred compensation plan.

If a participant leaves Novartis due to voluntary resignation or termination by the company for misconduct, none of the awards vest. Where a member is terminated by the company for reasons other than for performance or conduct, the award vests on a pro rata basis for time spent with the company during the performance period. In such a case, the award will vest on the regular vesting date (no acceleration), will be subject to performance should an evaluation be possible, and will also be subject to other conditions such as observing the conditions of a non-compete agreement. Executives leaving Novartis due to approved retirement, including approved early retirement, death or disability, will receive full vesting of their award on the normal vesting date (acceleration will only apply in the case of death). The award will be subject to performance, should an evaluation be possible, and it will also be subject to other conditions such as observing the conditions of a non-compete agreement. Further details can be found in Note 26 of the Financial Statements (See "Item 18. Financial Statements—Note 26").

The Board and Compensation Committee retain accountability for ensuring that rules are applied correctly, and for determining whether different treatment should apply in exceptional circumstances. This is necessary to ensure that the treatment of any award in the event of cessation of employment is appropriate.

Long-Term Performance Plan (LTPP)

This is the first of the two long-term incentive plans.

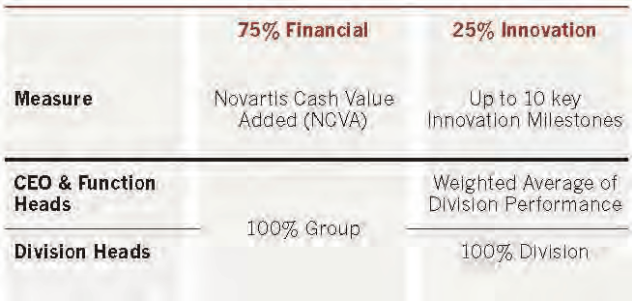
Overview

The LTPP, as described below, was granted for the first time to the CEO and Executive Committee members in 2014. The target incentive is 200% of base compensation for the CEO, and ranges from 140% to 190% for other Executive Committee members. Additional executives in key positions, with a significant impact on the long-term success of Novartis, will be invited to participate in the LTPP, as of 2015.

In previous Compensation Reports, there was a different plan which was also called LTPP. In this Compensation Report, that plan has been renamed Old Long-Term Performance Plan (OLTPP), and is described under section "Performance vesting of Legacy Long-Term Performance Plan (2012-2014)".

Performance measures

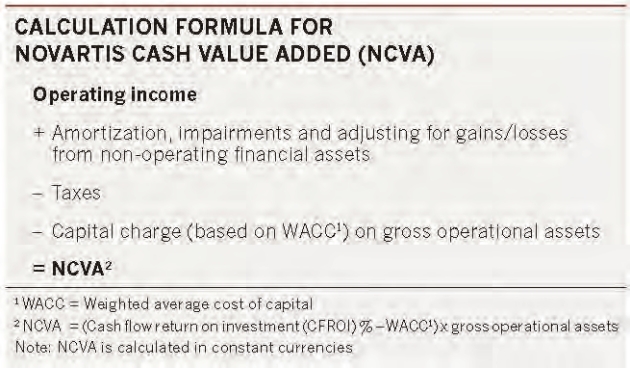
Awards under the LTPP are based on rolling three-year performance objectives, which are established at the time of grant and split as follows:



	75% Financial	25% Innovation
Measure	Novartis Cash Value Added (NCVA)	Up to 10 key Innovation Milestones
CEO & Function Heads	100% Group	Weighted Average of Division Performance
Division Heads		100% Division

Financial measure (Novartis Cash Value Added)—75% of LTPP

The Novartis Cash Value Added (NCVA) is a metric that is based on what the company assesses to be its cash flow return less a capital charge on gross operating assets. A summary of the calculation is below:



CALCULATION FORMULA FOR NOVARTIS CASH VALUE ADDED (NCVA)

Operating income

\+ Amortization, impairments and adjusting for gains/losses from non-operating financial assets

– Taxes

– Capital charge (based on WACC[1]) on gross operational assets

= NCVA[2]

[1] WACC = Weighted average cost of capital

[2] NCVA = (Cash flow return on investment (CFROI) % – WACC[1]) x gross operational assets

Note: NCVA is calculated in constant currencies

NCVA replaced Novartis Value Added (NVA), used in the calculation of the payout of the Old Long-Term Performance Plan (OLTPP), as the primary internal financial measure used for this LTPP. The company has built a framework that links its strategy with CFROI (Cash flow return on investment) and NCVA and shows how all levels of the organization can impact CFROI/NCVA and drive value creation. In future, the Committee will continue to evaluate this performance metric to ensure that it aligns with the company strategy, particularly given the changes to the business model following the portfolio review.

The three-year targets are determined considering expected growth rates in sales, operating income and return from invested capital, under foreseen economic circumstances.

At the end of the performance cycle, the NCVA performance factor is calculated. The NCVA performance factor is based on a 1:3 payout curve, where a 1% deviation in realization versus target leads to a 3% change in payout (for example, a realization of 105% leads to a payout factor of 115%). If performance over the three-year vesting period falls below 67% of target, no payout is made for this portion of LTPP. If performance over the three-year vesting period is above 133% of target, payout for this portion of LTPP is capped at 200% of target.

The calculated performance realization is adjusted for unplanned major events during the cycle (e.g. significant merger and acquisition transactions).

Innovation measure—25% of LTPP

Innovation is a key element of the Novartis strategy. Divisional innovation targets are set at the beginning of the performance cycle, comprised of up to ten target milestones that represent the most important research and development project milestones for each division. These milestones are chosen because of the expected future impact to Novartis in terms of potential revenue, or due to their qualitative potential impact to science, medicine and the treatment or care of patients. The CEO and function heads receive the weighted average of divisional innovation payouts.

The Research and Development Committee, established during 2014, gave input to the Board during the innovation target-setting process for targets under the LTPP for the first time. It also assists the Board and Compensation Committee in evaluating performance against the innovation targets at the end of the cycle.

A payout matrix has been established for this metric that allows 0-150% payout for the achievement of the target milestones. If all target milestones are achieved, a payout of 150%-200% may be awarded for extraordinary additional achievement.

Long-Term Relative Performance Plan (LTRPP)

Overview

This is the second of the two long-term incentive plans.

The LTRPP was granted for the first time to the CEO and Executive Committee members in 2014. The target incentive is 100% of base compensation for the CEO, and ranges from 30% to 90% for other Executive Committee members.

Performance measure

LTRPP is based on the achievement of long-term relative Group Total Shareholder Return (TSR) versus the peer group of 12 companies in the healthcare industry over rolling three-year performance periods. TSR is calculated in US dollars as share price growth plus dividends over the three-year performance period. The calculation will be based on Bloomberg standard published TSR data, which is publicly available.

The peer group for the 2014-2016 performance cycle is the same as for determining the compensation of Executive Committee members and is comprised of Abbott, AbbVie, Amgen, AstraZeneca, Bristol-Myers Squibb, Eli Lilly & Company, GlaxoSmithKline, Johnson & Johnson, Merck & Co., Pfizer, Roche and Sanofi.

At the end of the performance period, all companies are ranked in order of highest to lowest TSR, and the position in the peer group determines the payout range as follows:

PAYOUT MATRIX

Position in peer group	Payout range
Positions 1-3	160%-200%
Positions 4-6	100%-140%
Positions 7-10	20%-80%
Positions 11-13	0%

The Compensation Committee determines the payout within the ranges shown, and takes into consideration factors such as absolute TSR, overall economic conditions, currency fluctuations and other unforeseeable situations.

Target Disclosure

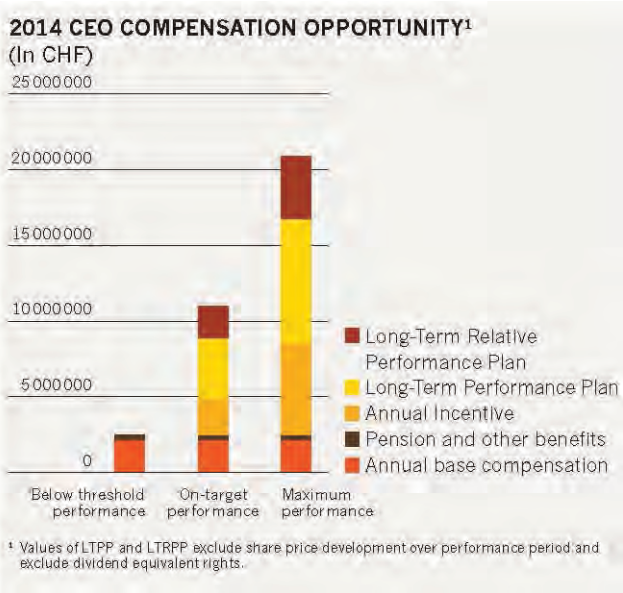
Novartis strives for transparency in relation to pay for performance. Internal financial, innovation and individual targets under the Annual Incentive plan and the LTPP are considered confidential at the time of setting. This is because communicating such targets would allow substantial insight into Novartis' forward-looking strategies and therefore would place the company at a competitive disadvantage. In order to ensure transparency whilst avoiding competitive risk, they will be disclosed to shareholders together with the achievements against such targets under both plans at the end of each performance cycle.

Malus and Clawback

Any incentive compensation paid to members of the Executive Committee is subject to "malus" and "clawback" rules. This means that the Board of Directors for the CEO, or the Compensation Committee for the other members of the Executive Committee, may decide not to pay any unpaid or unvested incentive compensation (malus), or seek to recover incentive compensation that has been paid in the past (clawback), where the payout has been proven to conflict with internal management standards including company policies and accounting policies or a violation of law. This principle applies to both the Annual Incentive and to the Long-Term Incentives.

2014 CEO Target Compensation

In January 2014, at target, the CEO's compensation was made up of 18% annual base compensation, 2% benefits, 27% Annual Incentive and 53% Long-Term Incentive. The Long-Term Incentive was split according to a ratio of 2:1 LTPP to LTRPP.



2014 EXECUTIVE COMMITTEE COMPENSATION

2014 CEO Compensation

The 2014 compensation of the CEO is outlined in detail within this section:

Base salary: The CEO's base salary remained CHF 2,060,500 for 2014.

Benefits: The CEO received pension benefits of 165,584 and other benefits of 222,818 during 2014.

Annual Incentive: Overall, the company exceeded its financial targets for the year set by the Board in constant currencies. The Group was marginally behind its sales target, despite continued success of growth products and expansion into emerging growth markets. Group net income was ahead of target mainly due to the cost control measures taken, which translated into strong operating income performance. Corporate net result was ahead of target mainly due to proceeds from Novartis Venture Fund divestments and lower taxes. Strong performance in Group free cash flow as a percentage of sales was mainly due to higher cash flows from operating activities, hedging gains and proceeds from Novartis Venture Fund divestments. Finally, the Group finished ahead of innovation targets set for 2014, with 13 major approvals in key markets and important pipeline advancements (e.g. LCZ696, *Zykadia*).

CEO 2014 BALANCED SCORECARD

Group Financial and Innovation Targets	Performance metrics	Individual Weight	Target in cc	Realization (versus target in constant currencies)
	Group net sales	20%	$59,592 million	Slightly below
	Corporate net result[1]	20%	$ – 2,898 million	Significantly exceeded
	Group net income	30%	$10,240 million	Exceeded
	Group free cash flow as % of sales	20%	17%	Significantly exceeded
	Innovation	10%	Weighted average of division Innovation payouts	Exceeded
	Total	100%		**Overall exceeded targets**
Individual Objectives	Specific financial targets		Reported operating income was 7% ahead of prior year in constant currencies (cc), and ahead of target (cc) after adjusting for an exceptional pre-tax impairment charge of $1.1 billion related to the pending divestment of the influenza vaccines business as a result of the portfolio transformation. Core operating income was 8% ahead of prior year (in cc) and core EPS above target.	

Continued

Individual Objectives (continued)			
Individual Objectives continued	Innovation and growth	2014 was an excellent year for innovation and growth. The company continued to invest in its pipeline, with the Novartis Institutes of BioMedical Research producing 13 new "Proof of Concepts" (above target). In total, Novartis secured many key Pharmaceuticals Division approvals, including an important positive trial read-out for LCZ696 in chronic heart failure. Alcon launched its cataract surgical suite and Sandoz progressed its biosimilars pipeline. Growth products now account for 32% of total sales, and total emerging growth markets have grown +11% compared to prior year (cc).	
	Portfolio review	2014 was a transformative year for the company. Novartis completed its portfolio review, and is in the process of closing the transactions. Going forward, and subject to regulatory approval, the company will focus on three leading divisions: Pharmaceuticals, Alcon and Sandoz. The closure of the transactions leading to the divestment of the Animal Health Division January 1, 2015 and the blood transfusion diagnostics January 9, 2014 unit took place succesfully.	
	Organization, quality and customer satisfaction	The investment in Quality Assurance paid off across the Novartis network: There were 247 health authority inspections in 2014, 243 were good or acceptable, with two deemed unsatisfactory and two pending. In addition, the company accelerated the process of upgrading its compliance and integrity processes, improved global talent development. However, the company was disappointed with certain compliance and reputation challenges.	
	Cross-divisional synergies	Novartis created Novartis Business Services to better capture synergies across the business. The launch has progressed well and is on track.	
			Met or exceeded targets

(1) Corporate net result includes corporate cost, income from associated companies, net financial income and income taxes

Details of the performance management process for the CEO are included under section "Compensation Governance—Executive Committee Performance Management Process". Following a thorough performance evaluation, including assessed Values and Behaviors, the Compensation

Committee determined that the CEO's Annual Incentive performance factor would be 130%. The value of his Annual Incentive award was determined as follows:

2014 CEO ANNUAL INCENTIVE

	Annual base salary (CHF 000)	x	Target incentive %	x	Performance Factor	=	Final award (CHF 000)
Annual Incentive	2,061	x	150%	x	130%	=	4,018[1]

(1) 50% of the Annual Incentive was paid in cash and 50% was paid as 23,706 restricted share units, which will have a three-year vesting period.

The table below shows how the 2014 long-term incentive grants of the CEO were determined. These grants were awarded under the LTPP and LTRPP and will vest to the extent that performance conditions have been met for the 2014-2016 cycle. An overview of these plans is outlined under "—2014 Executive Committee Compensation System" above.

2014 CEO LONG TERM INCENTIVE GRANTS

	Annual base salary (CHF 000)	x	Target incentive %	=	Grant value (CHF 000)	Number of RSUs[1] (Share price = 73.75)
LTPP	2,061	x	200%	=	4,122	55,878
LTRPP	2,061	x	100%	=	2,061	27,939

(1) Achievement will be reported in the 2016 Compensation Report.

Executive Committee Compensation Tables (Audited)

Compensation of members of the Executive Committee for 2014

The following table discloses the compensation paid or granted to the CEO and other members of the Executive Committee for performance in 2014.

Alignment of reporting and performance

The compensation table synchronizes the reporting of Annual Incentive compensation with the performance in the given year (i.e., all amounts awarded for performance in 2014 are disclosed in full). This includes the restricted shares granted under the Annual Incentive, which will vest three years following the grant based on plan rules.

For the LTPP and LTRPP, the target values (based on 100% achievement) at the time of grant are shown. In the past, the Old Long-Term Performance Plan (OLTPP) was only reported in the Executive Committee compensation tables at vesting. This change allows an alignment between reporting and the new binding vote on Executive Committee compensation. It also increases transparency, as both the grant and vesting of long-term incentives are reported to shareholders.

The performance and vesting value of the LTPP and LTRPP for the 2014-2016 performance cycles will be reported in the 2016 Compensation Report.

The achievement against target, and vesting value of the OLTPP performance cycle 2012-2014 is shown in a separate table under "Performance vesting of Legacy Long-Term Performance Plan (2012-2014)".

Valuation principles

For the purpose of the tables contained within this Compensation Report, and in order to allow a comparison with other companies, Novartis shares and ADRs are disclosed at their market value on the date of grant. Market value is the quoted closing share price at that date. Restricted shares and RSUs are disclosed at the underlying value of Novartis shares and ADRs. PSUs are also valued for the purpose of this Compensation Report at the underlying value of the Novartis shares and ADRs at the grant date, and are disclosed at target value, assuming that they will vest at 100% achievement.

EXECUTIVE COMMITTEE MEMBER COMPENSATION FOR FINANCIAL YEAR 2014[1]

		Fixed compensation and pension benefits		Variable compensation					
		Base compensation	Pension benefits	2014 Annual Incentive (AI)		Long-Term Performance Plan (LTPP) 2014-2016 cycle	Long-Term Relative Performance Plan (LTRPP) 2014-2016 cycle	Other	Total compensation
	Currency	Cash (Amount)	(Amount)[2]	Cash (Amount)	Shares (Value at grant date)[3]	PSUs (Target value at grant date)[4]	PSUs (Target value at grant date)[4]	(Amount)[5]	(Amount)[6]
Joseph Jimenez (Chief Executive Officer)	CHF	2,060,500	165,584	2,009,000	2,009,084	4,121,003	2,060,501	222,818	12,648,490
Steven Baert (as of February 26, 2014)	CHF	482,426	68,963	309,212	309,253	709,328	136,438	103,147	2,118,767
Juergen Brokatzky-Geiger (until February 25, 2014)[7]	CHF	110,650	22,454	0	0	0	0	3,245,256	3,378,360
Kevin Buehler (until April 30, 2014)[8]	$	382,691	82,991	230,400	230,384	729,614	345,620	4,139,920	6,141,620
Felix R. Ehrat	CHF	875,000	154,299	0	1,408,037	1,496,019	440,066	8,928	4,382,349
David Epstein	$	1,400,000	343,460	1,260,000	1,260,050	2,520,002	1,260,001	277,804	8,321,317
Mark C. Fishman	$	990,000	294,572	1,009,800	1,009,818	1,881,034	891,033	78,369	6,154,626
Richard Francis (as of May 1, 2014)[9]	CHF	466,667	114,435	211,450	211,451	871,135	186,735	3,364,623	5,426,496
Jeff George	$	924,520	127,826	654,341	654,416	1,470,358	275,692	1,084,850	5,192,003
George Gunn[10]	CHF	865,000	116,542	622,800	622,828	1,384,066	346,035	0	3,957,271
Harry Kirsch	CHF	829,167	148,526	888,250	888,265	1,360,024	425,021	31,980	4,571,233
Brian McNamara	$	673,077	76,484	578,000	578,083	1,020,055	204,076	77,717	3,207,492
Andrin Oswald	CHF	827,500	125,406	539,500	539,519	1,162,005	249,054	233,675	3,676,659
André Wyss (as of May 1, 2014)	CHF	466,667	59,703	0	736,223	935,003	249,349	58,045	2,504,990
Total[11]	**CHF**	**10,978,356**	**1,821,737**	**7,992,041**	**10,136,681**	**19,004,820**	**6,813,877**	**12,440,922**	**69,188,434**

See "2013 Comparative Information" for 2013 compensation figures.

(1) Does not include reimbursement for travel and other necessary business expenses incurred in the performance of their services as these amounts are not considered compensation. In general, for those who have left the Executive Committee of Novartis (ECN) in the course of 2014, the information under the columns "Base compensation", "Pension benefits", "Annual Incentive", "Long-Term Performance Plan" and "Long-Term Relative Performance Plan" in the table above reflects their pro rata compensation over 2014 for the period they were a member of the ECN. The information under the column "Other" includes inter alia their pro-rata compensation from the date they stepped down from the ECN to December 31, 2014. For those who have joined the ECN in the course of 2014, the information under the columns "Base compensation", "Pension benefits" and "Annual Incentive" includes their pro-rata compensation from the date they joined the ECN to December 31, 2014. The information under the "Long-Term Performance Plan" and "Long-Term Relative Performance Plan" in the table above reflects their pro rata compensation at target from the date they joined the ECN to December 31, 2016.

(2) Includes service costs of pension and post-retirement healthcare benefits accumulated in 2014, in accordance with IAS19. In addition, in compliance with the Minder Ordinance, it includes an amount of mandatory employer social security contributions of CHF 76,534. This amount provides a right to the maximum future insured government benefit for the members. This is out of a mandatory total of CHF 2,980,528 paid by Novartis to both Swiss and US governmental social security systems.

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(3) The portion(s) of the Annual Incentive delivered in shares is rounded up to the nearest share based on the closing share price on the grant date, i.e. January 21, 2015.

(4) The amounts shown in these columns represent the underlying share value of the target number of PSUs granted to each ECN member for the performance cycle 2014-2016 based on the closing share price on January 22, 2014. The closing share price on this date was CHF 73.75 per Novartis share and $80.79 per ADR.

(5) Includes any other perquisites, benefits in kind, international assignment benefits as per global mobility policy (e.g. housing, international health insurance, children's school fees, tax equalization) and other compensation. Does not include relocation costs paid in 2014.

(6) All amounts are before deduction of employee's social security contribution and income tax due by the Executive Committee member.

(7) Juergen Brokatzky-Geiger stepped down from the Executive Committee on February 25, 2014 and as of February 26, 2014 he has been appointed as Global Head of Corporate Social Responsibility. He remained under the old Executive Committee incentive compensation system. As a result, his variable compensation has been reported in full under the column "Other".

(8) Kevin Buehler stepped down from the Executive Committee on April 30, 2014. In accordance with the contractual 12 month notice period of his employment agreement, he will retire from the Company on April 30, 2015. He will receive further contractual compensation which includes the base salary, pension and other benefits (pro-rata until April 30, 2015) and the vesting of his incentive awards in accordance with the terms of the Novartis plan rules. His compensation does not include an annual pension in payment ($507,017) following the acquisition of Alcon in 2011.

(9) Richard Francis will receive compensation in the form of 41,500 Restricted Stock Units (RSUs) for lost entitlements at his former employer with a total value at grant of CHF 3.2 million. The vesting of the RSUs will be staggered based on the vesting period at his former employer, and extend over the period from 2015-2017, provided that he remains employed with Novartis at the respective due dates. 21,500, 13,500 and 6,500 RSUs will respectively vest on February 1, 2015, 2016 and 2017.

(10) Following the completion on January 1, 2015 of the transaction with Eli Lilly, George Gunn, Division Head, Novartis Animal Health, stepped down from the Executive Committee of Novartis. He will provide assistance with regard to the post-closing divestment of Animal Health until he will reach his contractual retirement age in July 2015. George Gunn will receive further contractual compensation which includes the base salary, pension and other benefits (pro-rata until July 31, 2015) and the vesting of his incentive awards in accordance with the terms of the Novartis plan rules.

(11) Amounts in US dollars for Kevin Buehler, David Epstein, Mark C. Fishman, Jeff George and Brian McNamara were converted at a rate of CHF 1.00 = $1.094, which is the same average exchange rate used in the Group's consolidated financial statements. At the time of his appointment as Head of Alcon, Jeff George's Swiss employment agreement was replaced with a US employment agreement in US dollars.

EXECUTIVE COMMITTEE MEMBER—EQUITY AWARDS FOR FINANCIAL YEAR 2014 (Number of equity instruments)[1]

	Variable compensation			
	2014 Annual Incentive (AI) Equity (Number)[2]	**Long-Term Performance Plan (LTPP) Target PSUs (Number)[3] 2014-2016 cycle**	**Long-Term Relative Performance Plan (LTRPP) Target PSUs (Number)[3] 2014-2016 cycle**	**Other Equity/ Target PSUs (Number)**
Joseph Jimenez	23,706	55,878	27,939	0
Steven Baert (as of February 26, 2014)	3,649	9,618	1,850	0
Juergen Brokatzky-Geiger (until February 25, 2014)	0	0	0	30,953[4]
Kevin Buehler (until April 30, 2014)	2,333	9,031	4,278	31,936
Felix R. Ehrat	16,614	20,285	5,967	0
David Epstein	12,760	31,192	15,596	0
Mark C. Fishman	10,226	23,283	11,029	0
Richard Francis (as of May 1, 2014)	2,495	11,812	2,532	41,500[5]
Jeff George	6,627	18,224	3,417	0
George Gunn	7,349	18,767	4,692	0
Harry Kirsch	10,481	18,441	5,763	0
Brian McNamara	5,854	12,626	2,526	0
Andrin Oswald	6,366	15,756	3,377	0
André Wyss (as of May 1, 2014)	8,687	12,678	3,381	0
Total	**117,147**	**257,591**	**92,347**	**104,389**

See "2013 Comparative Information" for 2013 compensation figures.

(1) See also corresponding footnote 1 of the table 'EXECUTIVE COMMITTEE MEMBER COMPENSATION FOR FINANCIAL YEAR 2014' with regard to the Executive Committee members who have left or joined the ECN in the course of 2014.

(2) Vested shares, Restricted Shares and/or Restricted Stock Units (RSUs) granted under the Annual Incentive for performance year 2014.

(3) Target number of Performance Share Units (PSUs) granted under the LTPP and LTRPP as applicable for the 2014-2016 performance cycle.

(4) Juergen Brokatzky-Geiger remained under the old Executive Committee compensation system. The information under the column "Other" includes the following equity awards: 12 638 Restricted Shares granted under the Novartis Equity Plan Select, 6 342 investment shares and 3 171 matching shares under the Employee Share Ownership Plan (ESOP) and 8 802 target PSUs under the Old Long-Term Performance Plan (OLTPP) for the 2014-2016 performance cycle.

(5) This amount reflects the total number of RSUs granted to Richard Francis in 2014 as compensation for lost entitlements at his former employer on joining Novartis.

EXECUTIVE COMMITTEE MEMBER COMPENSATION BASE AND VARIABLE COMPENSATION MIX FOR FINANCIAL YEAR 2014[1]

	Base salary	Variable compensation[2]
Joseph Jimenez	16.8%	83.2%
Steven Baert (as of February 26, 2014)	24.8%	75.2%
Felix R. Ehrat	20.7%	79.3%
David Epstein	18.2%	81.8%
Mark C. Fishman	17.1%	82.9%
Richard Francis (as of May 1, 2014)	24.0%	76.0%
Jeff George	23.2%	76.8%
George Gunn	22.5%	77.5%
Harry Kirsch	18.9%	81.1%
Brian McNamara	22.0%	78.0%
Andrin Oswald	24.9%	75.1%
André Wyss (as of May 1, 2014)	19.5%	80.5%
Total[3]	**19.8%**	**80.2%**

(1) Excludes pension and other benefits/compensation.

(2) See "—2014 Executive Committee Compensation—Executive Committee Compensation Tables (audited)—Executive Committee Member Compensation for Financial Year 2014" above with regard to the disclosure principles of variable compensation.

(3) Excludes Juergen Brokatzky-Geiger and Kevin Buehler who stepped down from the Executive Committee during 2014.

Loans to members of the Executive Committee

No loans were granted to current or former members of the Executive Committee or to "persons closely linked" to them in 2014. No such loans were outstanding as of December 31, 2014.

Other payments to members of the Executive Committee

During 2014, no other payments (or waivers of claims) were made to members of the Executive Committee or to "persons closely linked" to them. "Persons closely linked" are (I) their spouse, (II) their children below age 18, (III) any legal entities that they own or otherwise control, and (IV) any legal or natural person who is acting as their fiduciary.

Payments to former members of the Executive Committee

During 2014, no payments (or waivers of claims) were made to former members of the Executive Committee or to "persons closely linked" to them, except to Jonathan Symonds, our former CFO, who is currently on notice until January 31, 2015. In 2014, he received CHF 2,963,742, including a final payment in January 2015 under his contract as reported in the 2013 Compensation Report. This excludes CHF 69,030 for support on tax return filings and relocation costs.

Delivery of equity to Novartis associates

During 2014, a total of 14.5 million shares, RSUs and PSUs were granted to Novartis associates. This corresponded to a value of CHF 1,075 million. 2.36% of total share capital is currently issued under the

equity plans to Novartis associates. Novartis uses treasury shares or shares purchased on the open market at fair value to deliver equity to associates, which results in no dilution to existing shareholders.

Share ownership requirements for members of the Executive Committee

Executive Committee members are required to own at least a minimum multiple of their annual base compensation in Novartis shares or share options within three years of hire or promotion, as set out in the table below.

Chief Executive Officer	5 × base compensation
Members of the Executive Committee	3 × base compensation

In the event of a substantial rise or drop in the share price, the Board of Directors may, at its discretion, amend that time period accordingly.

The determination of equity amounts against the share ownership requirements is defined to include vested and unvested Novartis shares or ADRs, as well as RSUs acquired under the compensation plans, but excluding unvested matching shares from LSSP and ESOP and unvested PSUs from LTPP and LTRPP. The determination includes other shares as well as vested options of Novartis shares or ADRs that are owned directly or indirectly by "persons closely linked"[1] to them. The Compensation Committee reviews compliance with the share ownership guideline on an annual basis.

As of December 31, 2014, all members who have served at least three years on the Executive Committee have met or exceeded their personal Novartis share ownership requirements.

Shares, ADRs, Equity Rights and Share Options owned by members of the Executive Committee

The following tables show the total number of shares, ADRs, other equity rights and share options owned by members of the Executive Committee and "persons closely linked" to them as of December 31, 2014.

As of December 31, 2014, no member of the Executive Committee together with "persons closely linked" to them owned 1% or more of the outstanding shares (or ADRs) of Novartis, either directly or through share options.

The market value of share options (previously granted) is calculated using an option pricing valuation model as at the grant date.

SHARES, ADRs AND OTHER EQUITY RIGHTS OWNED BY EXECUTIVE COMMITTEE MEMBERS[1]

	Vested shares and ADRs	Unvested shares and other equity rights[2]	Total at December 31, 2014
Joseph Jimenez	256,685	399,811	656,496
Steven Baert	0	41,476	41,476
Felix R. Ehrat	48,398	95,424	143,822
David Epstein	72,222	267,940[3]	340,162
Mark C. Fishman	45,054	342,493[3]	387,547
Richard Francis	0	46,282	46,282
Jeff George	69,457	128,420	197,877
George Gunn	50,000	100,817	150,817
Harry Kirsch	31,860	90,650	122,510
Brian McNamara	19,216	62,511[3]	81,727
Andrin Oswald	86,305	115,863	202,168
André Wyss	25,940	68,598	94,538
Total[4]	**705,137**	**1,760,285**	**2,465,422**

(1) Includes holdings of "persons closely linked" to members of the Executive Committee (see definition under "2014 Executive Committee Compensation—Executive Committee Compensation Tables (audited)—Other payments to members of the Executive Committee")

(2) Includes Restricted Shares, Restricted Stock Units (RSUs) and target number of Performance Share Units (PSUs). Matching shares under the Employee Share Ownership Plan (ESOP), Leveraged Share Savings Plan (LSSP) and target number of PSUs are disclosed pro-rata to December 31, unless the award qualified for full vesting under the relevant plan rules. Awards under all other incentive plans are disclosed in full.

(3) Includes both deferred and unvested cash-settled equity awards and holdings of Novartis shares in US defined contribution plans.

(4) Juergen Brokatzky-Geiger and Kevin Buehler stepped down from the Executive Committee on February 25, 2014 and April 30, 2014, respectively. Juergen Brokatzky-Geiger owned 257 640 vested shares and 114 080 unvested shares and other equity rights at February 25, 2014. Kevin Buehler owned 158,090 vested shares and 267,436 unvested shares and other equity rights at April 30, 2014.

SHARE OPTIONS OWNED BY EXECUTIVE COMMITTEE MEMBERS[1]

	Number of share options		
	2011	Other[2]	Total at December 31, 2014
Joseph Jimenez	0	157,266	157,266
Jeff George	141,396	0	141,396
Brian McNamara	0	50,764	50,764
André Wyss	0	658,313	658,313
Total[3][4]	**141,396**	**866,343**	**1,007,739**

(1) The last share options under the Novartis Equity Plan "Select" were granted in January 2013.

(2) Share options disclosed for a specific year were granted in that year under the Novartis Equity Plan Select. The column "Other" refers to share options granted in 2008 or earlier, to share options granted to these executives while they were not Executive Committee members (nor Permanent Attendees), and to share options bought on the market by the Executive Committee members or "persons closely linked" to them (see definition under "—2014 Executive Committee Compensation—Executive Committee Compensation Tables (audited)—Other payments to members of the Executive Committee" above). Share options granted from 2012 onwards are unvested at December 31, 2014.

(3) No other Executive Committee members owned share options at December 31, 2014.

(4) Juergen Brokatzky-Geiger and Kevin Buehler stepped down from the Executive Committee on February 25, 2014 and April 30, 2014, respectively. At February 25, 2014, Juergen Brokatzky-Geiger owned 211 766 share options. At April 30, 2014, Kevin Buehler owned 605 877 share settled appreciation rights resulting from conversion of Alcon equity into Novartis equity.

PERFORMANCE VESTING OF LEGACY LONG-TERM PERFORMANCE PLAN (2012-2014)

Overview

Grants are no longer made under this plan to members of the Executive Committee, however performance for the vesting cycles 2012-2014 is reported in this Compensation Report. The final Old Long-Term Performance Plan (OLTPP) cycle 2013-2015 will be reported in the Compensation Report of 2015.

The OLTPP provided grants based on a target percentage of base compensation at the beginning of each plan cycle. It represented 175% of base salary for the CEO.

Form of award at grant

At the beginning of the performance period, participants were granted a target number of PSUs according to the following formula:

STEP 1	Annual Base Compensation	x	Target Incentive %	=	Grant Value
STEP 2	Grant Value	/	Share Price	=	Target Number of PSUs

Performance measure

The rewards were based on rolling three-year Group performance objectives focused on the Novartis Economic Value Added (NVA) measured annually. NVA takes into account Group operating income adjusted for interest, taxes and cost of capital charge. A description is included under "Item 5. Operating and Financial Review and Prospects—Item 5.A Operating Results—Non-IFRS measures as defined by Novartis."

The NVA performance factor was based on a 1:5 payout curve, where a 1% deviation in realization versus target led to a 5% change in payout (for example, a performance ratio of 105% would have led to a performance factor of 125%). If performance over the three-year vesting period would have fallen below 80% of target, no shares would have vested. The performance factor was capped at 200% of target, corresponding to an achievement of 20% above target.

Delivery at vesting

At the end of the three-year performance period, the target number of PSUs was multiplied by the performance factor approved by the Compensation Committee. PSUs were converted into Novartis shares and immediately vested. In the United States, awards may also have been delivered in cash under the US deferred compensation plan.

Outcome of the performance cycle 2012 - 2014

Over the three-year performance period, 2012 to 2014, Novartis performed 13.5% ahead of the $6.5 billion NVA target, corresponding to a payout of 168% following the application of the 1:5 payout curve. This achievement was mainly driven by strong operating income performance. While the entire three-year cycle was impacted by significant negative exchange rate differences (more than $1.4 billion), which are not adjusted in NVA, this was more than offset by strong performance in growth products and in emerging growth markets, and productivity initiatives (procurement and resource allocation). In arriving at the NVA performance score, the Compensation Committee excluded the favorable impact from the delayed entry of generic competition for *Diovan* monotherapy in the US, income generated from

the sale of the Idenix Pharmaceuticals, Inc. and LTS Lohmann Therapie-Systeme AG stakes, and the negative impact from executing the Group portfolio transformation (including an exceptional pre-tax impairment charge of $1.1 billion related to the pending divestment of the influenza vaccines business).

The table below shows the vesting of the OLTPP 2012-2014 cycle for the CEO and the other members of the Executive Committee.

PAYOUT SCHEDULE FOR OLTPP 2012-2014 PERFORMANCE CYCLE[1]

	Currency	Grant date target value of PSUs granted	Number of PSUs granted	Performance factor payout for OLTPP 2012-2014 cycle	Number of Novartis shares delivered at vesting	Value realized on vesting at vesting date share price
Joseph Jimenez	CHF	3,605,926	66,530	168%	111,771	9,472,592
Other 13 members of the Executive Committee . .	CHF	7,783,335	142,747	168%	239,822	20,539,978
Total	**CHF**	**11,389,261**	**209,277**	**168%**	**351,593**	**30,012,570**

(1) For those who have left or joined the ECN in the course of the 2012-2014 performance period, the information disclosed under this table reflects the pro-rata LTPP 2012-2014 payout attributable to the period they were a member of the Executive Committee.

For the Executive Committee, including the CEO, the impact of the share price appreciation over the vesting period on the total value realized at vesting was CHF 10.9 million. For the CEO, the impact of the share price appreciation was 3.4 million. This represents 36% of the overall vesting value.

2015 EXECUTIVE COMMITTEE COMPENSATION SYSTEM

The 2015 compensation system for members of the Executive Committee will remain the same as the 2014 system (see "—Executive Committee Compensation Philosophy & Principles" and "—2014 Executive Committee Compensation System" above), except for the Annual Incentive component.

Annual Incentive

The Annual Incentive continues to be based on a payout matrix made up of a balanced scorecard, including financial targets and individual objectives, and an assessment against the Novartis Values and Behaviors.

Balanced scorecard

Short-term innovation has been removed from the Annual Incentive due to the inclusion of long-term innovation in the LTPP. The removal of this metric has resulted in a corresponding increase in the weighting of Group net sales for the CEO and function heads. Individual objectives will be specific to the business requirements of 2015.

Values and Behaviors

The updated Values and Behaviors are as follows:

	What we value	Observed Behaviors
Patients and Customers	**Innovation** by experimenting and delivering solutions	—Experiments and encourages others to do so —Takes smart risks that benefit patients and customers —Delivers new solutions with speed and simplicity
	Quality by taking pride in doing ordinary things extra-ordinarily well	—Is always looking for better ways to do things —Does not compromise on quality and safety and strives for excellence —Continuously works to improve own strengths and weaknesses
Team	**Collaboration** by championing high performing teams with diversity and inclusion	—Champions working together in high performing teams —Knows self and impact on others —Welcomes diversity and inclusion of styles, ideas and perspectives
	Performance by prioritizing and making things happen with urgency	—Is passionate to achieve goals, goes the extra mile —Puts team results before own success, acknowledges contribution of others —Prioritizes, decides and makes things happen with urgency
Self	**Courage** by speaking up, giving and receiving feedback	—Speaks up and challenges the norm —Acknowledges when things don't work and learns —Gives and accepts constructive feedback
	Integrity by advocating and applying high ethical standards every day	—Operates with high ethical standards —Is humble, caring, shows trust, respect and empathy —Lives by the code of conduct even when facing resistance or difficulties

Payout matrix

In order to align recognition of performance and demonstration of the Novartis Values and Behaviors, the Compensation Committee approved a mirrored payout matrix for the 2015 Annual Incentive, which is outlined below. Changes from the previous matrix applicable for 2014 (see "—2014 Executive Committee Compensation System—Variable Compensation—Performance Evaluation and Payout Determination" above) are shown in red.

2015 ANNUAL INCENTIVE PAYOUT MATRIX

			% Payout		
Performance vs. Balanced Scorecard	Exceeded Expectations	3	60–90%	130–160%	170–200%
	Fully met Expectations	2	0–70%	90–120%	130–160%
	Partially met Expectations	1	0%	0–70%	60–90%
			1	2	3
			Partially met Ex-pectations	Fully met Ex-pectations	Exeeded Ex-pectations
			Novartis Values and Behaviors Assessment		

2014 BOARD COMPENSATION SYSTEM

Board Compensation Philosophy and Benchmarking

The Board of Directors sets compensation for its members at a level that allows for the attraction and retention of high-caliber individuals with global experience, including a mix of Swiss and International members. The members of the Board of Directors do not receive variable compensation, underscoring their focus on corporate strategy, supervision and governance.

The Board sets the level of compensation for its Chairman and the other members to be in line with relevant benchmark companies, which include other large Swiss-headquartered multinational companies, ABB, Credit Suisse, Holcim, Nestlé, Roche, Syngenta and UBS. This peer group has been chosen for Board compensation due to the comparability of Swiss legal requirements, including broad personal and individual liabilities under Swiss law (and new criminal liability under the Swiss rules regarding executive compensation related to the Minder Initiative) and under US law (due to Novartis' secondary listing on the New York Stock Exchange).

The Board of Directors reviews the compensation of its members, including the Chairman, each year, based on a proposal by the Compensation Committee and advice from its independent advisor, including relevant benchmarking information.

Compensation of the Chairman of the Board

As Chairman, Dr. Reinhardt receives total annual compensation valued at CHF 3.8 million. The total compensation is comprised equally of cash and shares, as follows:

– Cash compensation: CHF 1.9 million per year

– Share compensation: annual value equal to CHF 1.9 million of unrestricted Novartis shares

In 2014, the company made employer contributions regarding the Chairman's participation in the Novartis Swiss standard pension and life insurance benefit plans. These contributions amounted to CHF 144,816. From the 2015 Annual General Meeting, Dr. Reinhardt will voluntarily waive the company contribution for pension and insurance benefits.

Dr. Reinhardt also receives compensation for lost entitlements at his former employer, with a total value of EUR 2.6 million, as reported in the 2013 Compensation Report. Payments are staggered based on the vesting period at his former employer, and extend over the period from 2014-2016, provided that he remains in office as Chairman at the respective due dates. On January 31, 2014, he received EUR 748,000 in cash[1].

For 2014, the Chairman voluntarily waived the increase in compensation to which he is entitled, which is an amount not lower than the average annual compensation increase awarded to associates based in Switzerland (1.5% for 2014). For the year 2015, the Chairman will also voluntarily waive this increase.

Compensation of the other members of the Board of Directors.

With effect from the AGM 2014, following a detailed review of Board compensation, the Board approved a revised policy, which reflects some of the changes to the company's governance model, and led to a reduction in fees. It better aligns the Board's compensation to the current levels of the Swiss peers. The annual fee rates for Board membership and additional functions are included in the table below.

2014 BOARD MEMBER ANNUAL FEE RATES

	Annual fee (CHF)
Chairman of the Board	3,800,000[(1)]
Board membership	300,000
Vice Chairman	50,000
Chair of Audit and Compliance Committee	120,000
Chair of the following Committees:	
—Compensation Committee	
—Governance, Nomination and Corporate Responsibilities Committee	
—Risk Committee	
—Research and Development Committee	60,000
Membership of Audit and Compliance Committee	60,000
Membership of the following Committees:	
—Compensation Committee	
—Governance, Nomination and Corporate Responsibilities Committee	
—Risk Committee	
—Research and Development Committee	30,000

(1) The Chairman also received company's pension contributions for 2014, which will be removed as of AGM 2015, and payment for loss of other entitlements with his previous employer of EUR 2,665,051. The Chairman receives no additional Committee fees for Chairing the Research and Development Committee.

In addition, the Board adopted the following policies regarding their compensation:

– 50% of compensation is delivered in cash, paid on a quarterly basis in arrears;

– 50% of compensation is delivered in shares in two installments; one six months after the AGM and one twelve months after the AGM; and

1 On January 31, 2015 and 2016 he will respectively receive EUR 871,251 and EUR 1,045,800.

– Since the 2014 AGM, Board members bear the full cost of their employee social security contributions, if any, and do not receive share options or pension benefits.

Finally, two Board members, who stepped down at the 2014 AGM, received delegated Board membership fees of CHF 100,000 each per year for their work respectively on the boards of the Novartis Institute for Tropical Diseases and the Genomics Institute of the Novartis Research Foundation.

The Board compensation system will remain unchanged in 2015.

2014 BOARD COMPENSATION

Board Member Compensation Table (audited)

The following table discloses the 2014 Board member compensation. Board compensation is reported as the amount earned in the financial year. This represents a difference from the 2013 Compensation Report, which reported Board member compensation for the period covering the 2013 AGM to the 2014 AGM.

BOARD MEMBER COMPENSATION EARNED FOR FINANCIAL YEAR 2014[1]

	Board membership	Vice Chairman	Audit and Compliance Committee	Compensation Committee	Governance, Nomination and Corporate Responsibilities Committee	Research and Development Committee[2]	Risk Committee	Chairman's Committee[2]	Delegated board membership	Cash (CHF) (A)	Shares (CHF) (B)	Shares (Number)[3]	Other (CHF) (C)[4]	Total (CHF) (A)+(B)+(C)[5]
Joerg Reinhardt[6]	Chair					Chair		Chair		2,058,334	1,741,666	12,180	157,844[7]	3,957,844
Ulrich Lehner	●	●	●	●	●		●[8]	●		262,500	262,500	1,527	37,851	562,851
Enrico Vanni	●	●	●	Chair		●		●		267,500	267,500	1,625	11,173[9]	546,173
Dimitri Azar	●		●			●				86,250	313,750	2,154	—	400,000
Verena A. Briner	●						●[10]			166,667	166,667	1,073	7,468[9]	340,802
William Brody (until February 25, 2014)	●			●					●[11]	43,750	43,750	—	83,333[12]	170,833
Srikant Datar	●		Chair	●			●	●		260,000	260,000	1,560	—	520,000
Ann Fudge	●			●	●		●			204,167	204,167	1,268	—	408,334
Pierre Landolt[13]	●				Chair					—	368,333	2,340	7,031[9]	375,364
Charles L. Sawyers	●					●				166,667	166,667	1,073	—	333,334
Andreas von Planta	●		●		●		Chair			234,167	234,167	1,462	9,175[9]	477,509
Wendelin Wiedeking (until February 25, 2014)	●				●		●			—	75,000	—	4,482[9]	79,482
William T. Winters	●									29,167	279,167	1,950	—	308,334
Rolf M. Zinkernagel (until February 25, 2014)	●				●				●[14]	54,167	54,167	—	175,870[9][15]	284,204
Total										**3,833,336**	**4,437,501**	**28,212**	**494,227**	**8,765,064**

See "2013 Comparative Information—2013 Board Compensation" for 2013 compensation figures.

(1) Does not include reimbursement for travel and other necessary business expenses incurred in the performance of their services as these are not considered compensation.

(2) As of February 26, 2014, the Research & Development Committee has been introduced and the Chairman's Committee disbanded.

(3) Represents the gross number of shares delivered to each Board member in 2014 in respect of the first of two equity instalments for the services from the 2014 AGM to the 2015 AGM. The second equity instalment will take place in February 2015. This number does not include the number of shares for the compensation for services for the period from January 1, 2014 to the 2014 AGM.

(4) In compliance with the Minder Ordinance, it includes an amount of mandatory employer social security contributions of CHF 27,771. This amount provides a right to the maximum future insured government benefit for the members. This is out of a mandatory total of CHF 359,890 paid by Novartis to both Swiss governmental social security systems.

(5) All amounts are before deduction of employee's social security contribution and income tax due by the Board member.

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(6) Does not include EUR 748,000 paid to Joerg Reinhardt on January 31, 2014 for lost entitlements at his former employer. This amount is the first of three instalments comprising to a total amount of EUR 2,665,051, which compensates him for lost entitlements with his previous employer due to him on joining Novartis. The second and third installment are staggered based on the vesting period at his former employer, and extend over the period from 2015-2016, provided that he remains in office as our Chairman at the respective due dates. On January 31, 2015 and 2016 he will respectively receive EUR 871,251 and EUR 1,045,800. The lost entitlements of EUR 2,665,051 of Joerg Reinhardt are included in full in the 2013 Board compensation table under "2013 Comparative Information—2013 Board Compensation" based on our disclosure policy to report compensation for lost entitlements in full in the year the member of the Board or ECN joined Novartis.

(7) Includes social security costs due by the individual and paid by the company until January 31, 2014 and service costs of pension and post-retirement healthcare benefits accumulated in 2014 in accordance with IAS19.

(8) Until February 25, 2014.

(9) Includes social security costs due by the individual and paid by the company until February 25, 2014. As of February 26, 2014, all Board members bear the full cost of their employee social security.

(10) As of February 26, 2014.

(11) The Board of Directors has delegated William Brody to the Board of Directors of the Genomics Institute of the Novartis Research Foundation (GNF) for the period from the 2014 AGM to the 2016 AGM.

(12) Includes his pro rata compensation for the delegated Board membership of GNF from February 26, 2014 to December 31, 2014.

(13) According to Pierre Landolt, the Sandoz Family Foundation is the economic beneficiary of the compensation.

(14) The Board of Directors has delegated Rolf M. Zinkernagel to the Scientific Advisory Board of the Novartis Institute for Tropical Diseases (NITD) and to the Board of Directors of the Genomics Institute of the Novartis Research Foundation (GNF) for the period from the 2014 AGM to the 2016 AGM.

(15) Includes his pro rata compensation for the delegated Board memberships of NITD and GNF from February 26, 2014 to December 31, 2014.

RECONCILIATION BETWEEN THE REPORTED BOARD COMPENSATION AND THE AMOUNT ENDORSED BY SHAREHOLDERS AT THE 2014 AGM[1]

	Currency	Board compensation earned during the financial year 2014 (as reported under "2014 Board Compensation—Board Member Compensation Table (audited)")	Less Board compensation paid for the period from January 1, 2014 to the 2014 AGM (2 months), delegated Board membership fees and employer social security[2]	Plus Board compensation to be earned/paid (in arrears) for the period from January 1, 2015 to the 2015 AGM (2 months)[3]	Total Board compensation earned for the period from the 2014 AGM to the 2015 AGM	Amount endorsed by shareholders at the 2014 AGM for the period from the 2014 AGM to the 2015 AGM	Amount within the endorsed amount approved by shareholders at the 2014 AGM
Joerg Reinhardt	CHF	3,957,844	(670,497)	657,737	3,945,084	3,962,000	Yes
Other Board members	CHF	4,807,220	(1,446,909)[4]	666,668	4,026,979	4,060,000	Yes
Total	**CHF**	**8,765,064**	**(2,117,406)**	**1,324,405**	**7,972,063**	**8,022,000**	**Yes**

(1) The amount endorsed in an advisory capacity by shareholders at the 2014 AGM is the total maximum amount of compensation for the members of the Board of Directors covering the period from the 2014 Annual General Meeting 2014 to the 2015 Annual General Meeting 2015, i.e. CHF 8,022,000.

(2) It includes an amount of mandatory employer social security contributions of CHF 27,771. This amount provides a right to the maximum future insured government benefit for the members. This is out of a mandatory total of CHF 359,890 paid by Novartis to both Swiss governmental social security systems.

(3) To be confirmed and reported in the Compensation Report of the 2015 Annual Report.

(4) Delegated Board membership fees earned after the 2014 AGM by William Brody and Rolf M. Zinkernagel are included in this amount.

Loans to members of the Board of Directors

No loans were granted to current or former members of the Board of Directors or to "persons closely linked" to them during 2014. No such loans were outstanding as of December 31, 2014.

Other payments to members of the Board of Directors

During 2014, no payments (or waivers of claims) other than those set out in the Board Member Compensation table (including its footnotes) under "—2014 Board Compensation—Board Member Compensation Table (Audited)" were made to current members of the Board of Directors or to "persons closely linked" to them.

Share ownership requirements for members of the Board of Directors

The Chairman is required to own a minimum of 30 000 shares and, other members of the Board of Directors are required to own at least 4 000 Novartis shares within three years after joining the Board of Directors, to ensure alignment of their interests with shareholders. Board members are prohibited from hedging or pledging their ownership positions in Novartis shares that are part of their guideline share ownership requirement, and are required to hold these shares for 12 months after retiring from the Board. As of December 31, 2014, all members of the Board of Directors who have served at least three years on the Board of Directors have complied with the share ownership guidelines.

Shares, ADRs and share options owned by members of the Board of Directors

The total number of vested Novartis shares and ADRs owned by members of the Board of Directors and "persons closely linked" to them as of December 31, 2014, is shown in the table below.

As of December 31, 2014, no member of the Board of Directors together with "persons closely linked" to them owned 1% or more of the outstanding shares (or ADRs) of Novartis. As of the same date, no member of the Board of Directors held any share options.

SHARES AND ADRs OWNED BY BOARD MEMBERS[1]

	Number of shares[2]
	At December 31, 2014
Joerg Reinhardt	466,951
Ulrich Lehner	36,405
Enrico Vanni	13,805
Dimitri Azar	7,258
Verena A. Briner	4,845
Srikant Datar	30,792
Ann Fudge	14,112
Pierre Landolt[3]	52,290
Charles L. Sawyers	2,933
Andreas von Planta	122,709
William T. Winters	3,590
Total[4]	**755,690**

(1) Includes holdings of "persons closely linked" to Board members (see definition under "2014 Executive Committee Compensation—Executive Committee Compensation Tables (audited)—Other Payments to Members of the Executive Committee").

(2) Each share provides entitlement to one vote.

(3) According to Pierre Landolt, the Sandoz Family Foundation is the economic beneficiary of the shares.

(4) William Brody, Wendelin Wiedeking and Rolf M. Zinkernagel stepped down from the Board of Directors on February 25, 2014. At February 25, 2014, William Brody owned 17,356 shares, Wendelin Wiedeking 278,139 shares and Rolf M. Zinkernagel 40,000 shares.

Payments to former members of the Board of Directors

During 2014, no payments (or waivers of claims) were made to former Board members or to "persons closely linked" to them, except for the amounts reported in Note 27 to the Group's audited consolidated financial statements (See "Item 18. Financial Statements—Note 27").

Note 27 to the Group's audited consolidated financial statements

The total expense for the year for the compensation awarded to the members of the Board of Directors and the members of the Executive Committee using IFRS measurement rules is presented in the Financial Report in Note 27 to the Group's audited consolidated financial statements (see "Item 18. Financial Statements—Note 27").

COMPENSATION GOVERNANCE

Legal framework

The Swiss Code of Obligations as well as the Corporate Governance Guidelines of the SIX Swiss Exchange require listed companies to disclose certain information about the compensation of members of the Board of Directors and members of the Executive Committee, their equity participation in the Group as well as loans made to them. This Annual Report fulfills that requirement. In addition, the Annual Report is in line with the principles of the Swiss Code of Best Practice for Corporate Governance of the Swiss Business Federation (economiesuisse).

Compensation decision-making authorities

Authority for decisions related to compensation are governed by the Articles of Incorporation, the Board Regulations and the Compensation Committee Charter, which are all published on the company website: www.novartis.com/corporate-governance. Amendments to the Articles of Incorporation will be proposed at the 2015 AGM (see brochure "Shareholder Information on the Compensation Votes at the 2015 AGM", which will include a description of the tasks and responsibilities of the Compensation Committee). Pending approval, the Board Regulations (including the charter of the Compensation Committee) will be amended accordingly. The current main responsibilities of the Compensation Committee are shown under "Item 6.C Board Practices—Corporate Governance Report—Board of Directors—Role of the Board of Directors and the Board Committees."

The Compensation Committee serves as the supervisory and governing body for compensation policies and plans within Novartis and has overall responsibility for determining, reviewing and proposing compensation policies and plans for approval by the Board of Directors in line with the Compensation

Committee Charter. A summary of discussions and conclusions of each committee meeting is delivered to the full Board. A summary of the compensation decision-making authorities is set out below:

COMPENSATION AUTHORIZATION LEVELS WITHIN THE PARAMETERS SET BY THE SHAREHOLDER'S MEETING

Decision on	Authority
Compensation of Board members	Board of Directors
Compensation of the Chief Executive Officer	Board of Directors
Compensation of the Executive Committee members	Compensation Committee

Committee member independence

The Compensation Committee is composed exclusively of members of the Board of Directors who meet the independence criteria set forth in the Board Regulations. From the 2014 AGM, the Compensation Committee had the following four members: Ann Fudge, Enrico Vanni, Srikant Datar and Ulrich Lehner. Enrico Vanni has served as Chair since 2012. William Brody retired at the AGM 2014 and Ulrich Lehner will not stand for re-election at the 2015 AGM.

Role of the Compensation Committee's independent advisor

The Compensation Committee retained Frederic W. Cook & Co. Inc. as its independent external compensation advisor for 2014. The advisor was hired directly by the Compensation Committee in 2011, and the Committee has been fully satisfied with the performance and independence of the advisor since its engagement. Frederic W. Cook & Co. Inc. is independent of management and does not perform any other consulting work for Novartis. In determining whether or not to renew the engagement with the advisor, the Compensation Committee evaluates, at least annually, the quality of the consulting service, the independence of the advisor and the benefits of rotating advisors.

Compensation Committee meetings held in 2014

In 2014, the Compensation Committee held six formal meetings and three additional joint meetings with the Governance, Nomination and Corporate Responsibilities Committee to implement the requirements of the Swiss rules regarding executive compensation related to the Minder Initiative in 2014. It also held two additional joint meetings with the Risk Committee to review risk within the compensation systems for executives and other associates, including the sales force. The Compensation Committee conducted a performance self-evaluation in 2014, and conducted a review of its charter, as it does every year.

Compensation governance and risk management

The Compensation Committee, with support from its independent advisor, reviews market trends in compensation and changes in corporate governance rules. It also reviews, together with the Risk Committee, the Novartis compensation systems to ensure that it does not encourage inappropriate or excessive risk taking and instead encourages behaviors that support sustainable value creation.

A summary of the risk management principles is outlined below:

RISK MANAGEMENT PRINCIPLES

- Rigorous performance management process, with approval of targets and evaluation of performance for the CEO by the Board of Directors
- Balanced mix of short-term and long-term variable compensation elements
- Balanced scorecard approach to performance evaluation under the annual incentive, including values and behaviors
- Clawback principles
- Performance-vesting long-term incentives only, with three-year overlapping cycles
- Variable compensation is capped at 200% of target
- Contractual notice period of 12 months
- Post-contractual non-compete limited to a maximum of 12 months (annual base compensation and annual incentive of the prior year only)
- No severance payments or change of control clauses
- Share ownership requirements; no hedging or pledging of Novartis share ownership position (this element also applies to Board members)

During 2014, the Board revised the employment contracts of all Executive Committee members to align with the new Swiss law. Executive Committee employment contracts provide for a notice period of up to 12 months and contain no change-of-control clauses or severance provisions (i.e. agreements concerning special notice periods, longer-term contracts, "golden parachutes", waiver of lock-up periods for equities and bonds, shorter vesting periods and additional contributions to occupational pension schemes).

Executive Committee Performance Management Process

To foster a high-performance culture, the company applies a uniform Performance Management Process worldwide, based on quantitative and qualitative criteria, including Novartis Values and Behaviors. Novartis associates, including the CEO and the members of the Executive Committee, are subject to a three-step formal process.

Objective setting → **Performance evaluation** → **Compensation determination**

Performance management process for the CEO

At the beginning of the year, the CEO presents the Group and divisional financial targets to the Board for approval. The Board also approves the performance against these targets at year end.

The CEO discusses his individual objectives for the coming year with the Chairman of the Board. The Board of Directors reviews and approves these objectives, which are incorporated into the balanced scorecard used for evaluating the CEO's performance. Details of the individual objectives for the CEO for 2014 are available under "—2014 Executive Committee Compensation—2014 CEO Compensation" above.

The Board of Directors periodically assesses the Group business performance and progress of the CEO against his objectives and incentive plan targets. At the mid-year performance review, the performance of the CEO is reviewed by the Chairman. For the year-end review, the CEO prepares and

presents to the Chairman, and later to the Board of Directors, the actual results against the previously agreed-upon objectives, taking into account the audited financial results as well as an assessment against the Novartis Values and Behaviors. At the year-end review the Board of Directors discusses the performance of the CEO without him being present. It evaluates the extent to which targeted objectives have been achieved and, to the extent possible, compares these results with peer industry companies, taking into account general economic and financial criteria and industry developments. The Board of Directors later shares its assessment with the CEO.

At its January meeting, following a recommendation from the Compensation Committee, the Board of Directors decides on the CEO's variable compensation for the prior performance cycles and the target compensation for the coming year. This meeting takes place without the CEO being present. The Board of Directors later shares its decisions with the CEO.

Performance management process for the other members of the Executive Committee (excluding the CEO)

Executive Committee members set their individual objectives with the CEO, who also reviews their performance at mid-year and year-end.

In the presence of the CEO and taking into consideration his recommendations, the Compensation Committee decides in January on the variable compensation of the members of the Executive Committee for the prior year and their target compensation for the coming year. The Compensation Committee informs the Board of its decisions, and the CEO later shares these decisions with the Executive Committee members.

2013 COMPARATIVE INFORMATION

The following information was published in the 2013 Compensation Report, and is replicated here, or amended as described, so that shareholders may compare the figures to the 2014 data.

2013 Executive Committee compensation

In the 2015 Compensation Report, all elements of Executive Committee will be directly comparable with the 2014 Compensation Report. However for this year, a full direct comparison is not so straightforward, due to the major changes in the compensation system, as well as the change in reporting of equity compensation to align with the new binding votes on compensation, which are required under Swiss law. The following changes apply compared to the 2013 Compensation Report:

Compensation system changes in the 2014 Compensation Report

- Introduction of a new Annual Incentive plan, with a mandatory deferred portion
- Removal of Equity Plan "Select", Employee Share Ownership Plan, Leveraged Share Savings Plan and Old Long-Term Performance Plan
- Rebalancing of the Long-Term Incentives and the Annual Incentive target compensation following the elimination of the above-mentioned plans
- Introduction of new Long-Term Incentive Plans i.e. LTPP and LTRPP

Equity reporting difference in the 2014 Compensation Report

As outlined under "2014 Executive Committee Compensation—Executive Committee Compensation Tables (Audited)", the target values for the new LTPP and LTRPP are shown at the time of grant. In the table "Executive Committee Member Market Value Compensation for Performance Year 2013" under "2013 Comparative Information", the OLTPP was only reported in the Executive Committee compensation tables at vesting. This change allows an alignment between reporting and the new binding

vote on Executive Committee compensation. It also increases transparency, as both the grant and vesting of long-term incentives is reported to shareholders.

The performance and vesting value of the LTPP and LTRPP for the 2014-2016 performance cycle will be reported in the 2016 Compensation Report. The achievement against target, and vesting value of the OLTPP performance cycle 2012-2014 is shown in the separate table "Payout Schedule For OLTPP 2012-2014 Performance Cycle" under "Performance Vesting of Legacy Long-Term Performance Plan (2012-2014)".

Social security reporting difference in the 2014 Compensation Report

As outlined in the table "Executive Committee Member Compensation For Financial Year 2014" under "2014 Executive Committee Compensation—Executive Committee Compensation Tables (Audited)", the compensation under the column "pension benefits" includes service costs of pension and post-retirement healthcare benefits accumulated in 2014 (in accordance with IAS19). In addition, and in compliance with the Minder Ordinance, "pension benefits" include an amount of mandatory employer social security contributions that provides a right to the maximum future insured government benefit for the Executive Committee members, out of a total mandatory amount paid by Novartis to both Swiss and US governmental social security systems. In the table "Executive Committee Member Market Value Compensation for Performance Year 2013" under "2013 Comparative Information", the employer social security contributions are not included. Had this item been included in the 2013 Compensation Report, the reported amount would have been CHF 60,840 out of a total amount of CHF 2,802,489.

The 2013 Executive Committee compensation tables are reproduced on the following pages.

EXECUTIVE COMMITTEE MEMBER MARKET VALUE COMPENSATION FOR PERFORMANCE YEAR 2013[1]

	Base compensation	Variable compensation								
		Short-term incentive plans		Long-term incentive plans		Benefits			Future LSSP/ESOP match[8]	Total compensation
	Cash (Amount)	Cash (Amount)	Shares (Market value)[2]	Equity Plan "Select" Shares (Market value)[3]	Old Long-Term Performance Plan (OLTPP) Shares (Market value)[4]	Pension benefits (Amount)[5]	Other benefits (Amount)[6]	Total (Amount)[7]	Shares (Market value)	Including future LSSP/ESOP match[9][10] (Amount)
Joseph Jimenez (Chief Executive Officer) CHF	2,055,417	1,061,200	0	3,714,124	6,125,823	176,071	93,652	13,226,287	0	13,226,287
Juergen Brokatzky-Geiger CHF	719,417	0	562,639	1,125,130	980,285	111,750	25,521	3,524,742	421,998[8]	3,946,740
Kevin Buehler $	1,136,792	755,700	0	3,022,839	2,042,452	221,243	67,832	7,246,858	0	7,246,858
Felix R. Ehrat CHF	841,667	0	718,325	1,436,503	1,155,441	169,575	0	4,321,511	718,325	5,039,836
David Epstein $	1,400,000	579,600	579,668	2,898,018	2,830,397	375,079	30,013	8,692,775	579,668	9,272,443
Mark C. Fishman $	990,000	866,300	0	3,465,002	1,765,989	244,152	208,836	7,540,279	0	7,540,279
Jeff George CHF	816,667	387,450	387,483	1,549,856	975,344	126,872	62,607	4,306,279	193,741	4,500,020
George Gunn CHF	865,000	545,000	0	908,305	1,469,616	119,676	44,682	3,952,279	0	3,952,279
Brian McNamara $	633,231	14,527	567,873	1,164,830	552,038	80,203	30,430	3,043,132	567,873	3,611,005
Andrin Oswald CHF	812,500	0	529,820	1,059,566	877,035	129,813	9,388	3,418,122	529,820	3,947,942
Jonathan Symonds (until April 30, 2013) CHF[11]	310,833	194,792	0	0	1,400,291	56,529	2,985,401	4,947,846	0	4,947,846
Harry Kirsch (as from May 1, 2013) CHF[12]	483,333	263,720	175,820	879,026	428,856	53,918	59,613	2,344,286	175,820	2,520,106
Total[13]	**10,760,277**	**4,506,033**	**3,437,610**	**20,450,720**	**20,077,080**	**1,797,473**	**3,593,293**	**64,622,486**	**3,103,227**	**67,725,713**

(1) Does not include reimbursement for travel and other necessary business expenses incurred in the performance of their services as these are not considered compensation.

(2) Participants elected to invest some or all of the value of their annual incentive in the Leveraged Share Savings Plan (LSSP) with a five-year vesting period or the Swiss Employee Share Ownership Plan (ESOP) with a three-year vesting period rather than to receive cash.

(3) Novartis shares granted under the Novartis Equity Plan "Select" have a three-year vesting period.

(4) Awarded based on the achievement of Novartis Economic Value Added (NVA) objectives over the three-year performance period ended December 31, 2013.

(5) Service costs of pension and post-retirement healthcare benefits accumulated in 2013.

(6) Includes perquisites and other compensation valued at market price. Does not include cost allowances and 2013 tax-equalization regarding the international assignment of David Epstein ($90,163), Jeff George (CHF 459,764) and Andrin Oswald (CHF 36,056). Does not include an annual pension in payment for Kevin Buehler as a result of a change of control clause ($499,524) relating to the acquisition of Alcon in 2011. Does not include dividend equivalents paid in 2013 to Kevin Buehler ($256,784) for pre Alcon merger RSUs grants, to David Epstein ($41,150) and Brian McNamara ($6,173) for RSUs grants made in or prior to 2010.

(7) The value of all equity grants included in this table has been calculated based on the closing price of January 22, 2014.

(8) Reflects shares to be awarded in the future under the share saving plans, either the five-year Leveraged Share Savings Plan (LSSP) or the three-year Swiss Employee Share Ownership Plan (ESOP). Participants will receive the full amount of additional shares ("matching shares") after the expiration of either the five- or three-year vesting period, assuming that they are still in service on the respective vesting date. Since Juergen Brokatzky-Geiger will reach the statutory retirement age before vesting of the LSSP, the matching award disclosed in the table reflects the value of the applicable prorated number of matching shares at his statutory age of retirement.

(9) The values of the shares and RSUs reflected in this table have been calculated based on market value at the date of grant. The closing share price on the grant date January 22, 2014 was CHF 73.75 per Novartis share and $80.79 per ADR.

(10) All amounts are gross amounts (i.e., before deduction of social security and income tax due by the executives). The employer social security contribution is not included.

(11) Jonathan Symonds stepped down from the Executive Committee as of April 30, 2013 and provides advisory work to Novartis since May 1, 2013. The information under the columns "Base compensation", "Short-term incentive plans" and "Pension benefits" in the table reflects his pro rata compensation over the period from January 1, 2013 to April 30, 2013 (i.e. the period during which he was member of the Executive Committee). The information under the column "Long-Term Performance Plan" in the table reflects his pro rata compensation for the performance period from January 1, 2011 to April 30, 2013 (i.e. the portion of the LTPP three-year performance period during which he was a member of the Executive Committee). The other compensation ("Other benefits") includes the contractual compensation and benefits from May 1, 2013 to December 31, 2013. Jonathan Symonds may receive further contractual compensation until January 2015 up to a maximum of CHF 2,969,293 in addition to relocation and financial planning reimbursements.

(12) The amounts reflect the compensation as Permanent Attendee to the Executive Committee from May 1, 2013 until December 31, 2013.

(13) Amounts in US dollars for Kevin Buehler, David Epstein, Mark C. Fishman and Brian McNamara were converted at a rate of CHF 1.00 = $1.079, which is the same average exchange rate used in the Group's consolidated financial statements.

EXECUTIVE COMMITTEE MEMBER—EQUITY AWARDS FOR PERFORMANCE YEAR 2013
(Number of equity instruments)

	Variable compensation			
		Long-term incentive plans		
	Short-term incentive plans			
	Shares (Number)[1]	Equity Plan "Select" Shares (Number)[2]	Old Long-Term Performance Plan (OLTPP) Shares (Number)	Future LSSP/ESOP match Shares (Number)
Joseph Jimenez (Chief Executive Officer)	0	50,361	83,062	0
Juergen Brokatzky-Geiger	7,629	15,256	13,292	5,722
Kevin Buehler	0	37,416	25,281	0
Felix R. Ehrat	9,740	19,478	15,667	9,740
David Epstein	7,175	35,871	35,034	7,175
Mark C. Fishman	0	42,889	21,859	0
Jeff George	5,254	21,015	13,225	2,627
George Gunn	0	12,316	19,927	0
Brian McNamara	7,029	14,418	6,833	7,029
Andrin Oswald	7,184	14,367	11,892	7,184
Jonathan Symonds (until April 30, 2013)[3]	0	0	18,987	0
Harry Kirsch (as from May 1, 2013)[4]	2,384	11,919	5,815	2,384
Total	**46,395**	**275,306**	**270,874**	**41,861**

(1) These shares have a five-year vesting period under LSSP and a three-year vesting period under ESOP.

(2) These shares awarded under the Equity Plan "Select" have a three-year vesting period.

(3) The shares under the column "Long-Term Performance Plan" in the table reflects his pro rata compensation for the performance period from January 1, 2011 to April 30, 2013 (i.e. the portion of the LTPP three-year performance period during which he was member of the Executive Committee).

(4) The amounts reflect the compensation as Permanent Attendee to the Executive Committee from May 1, 2013 until December 31, 2013.

2013 Board compensation

The 2013 Compensation Report shows Board member compensation for the period covering the 2013 AGM to the 2014 AGM. The table is reproduced from the 2013 Annual Report, amended for the change in presentation of the Chairman's lost entitlements at his former employer. In 2014, Board compensation is reported as the amount earned in the financial year. In addition, it may be noted that the Board compensation fees were reduced from the 2014 AGM onwards (see "—2014 Board Compensation System" above, for details of current fees). Starting in 2014 'other' compensation includes the full amount of lost entitlements from former employers in the year the executive joins the executive committee group or a Board Member joins the Board of Directors. For consistency purposes the lost entitlements of EUR 2,665,051 of Dr Jörg Reinhardt are included in the 2013 compensation table.

Social security reporting difference in the 2014 Compensation Report

As outlined in the table "Board Member Compensation Earned For Financial Year 2014" under "—2014 Board Compensation—Board Member Compensation Table (Audited)", above, the compensation under the column "other" includes service costs of pension and post-retirement healthcare benefits accumulated in 2014 (in accordance with IAS19). In addition, and in compliance with the Minder Ordinance, "pension benefits" include an amount of mandatory employer social security contributions that provides a right to the maximum future insured government benefit for the Board members, out of a mandatory total amount paid by Novartis to the Swiss governmental social security system. In the table "Board Member Compensation in 2013", these contributions were not included. Had this item been included in the 2013 Compensation Report, the reported amount would have been CHF 32,111 out of a total amount of CHF 795,519.

BOARD MEMBER COMPENSATION IN 2013[1]

	Board membership	Vice Chairman	Chairman's Committee	Audit and Compliance Committee	Risk Committee	Compensation Committee	Corporate Governance and Nomination Committee	Delegated board membership	Annual cash compensation (CHF) (A)	Shares (Market value) (CHF) (B)[2]	Shares (Number)	Other (CHF) (C)	Total (CHF) (A)+(B)+(C)
Daniel Vasella (until Feb 22, 2013)[3]	Chair		Chair	●[4]	●[4]	●[4]	●[4]		707,283	697,148	11,299	1,573,334[5]	2,977,765
Joerg Reinhardt (as of Aug 1, 2013)	Chair		Chair						791,667	950,023	14,064	3,439,802[6]	5,181,492
Ulrich Lehner	Chair a.i.[7]	●	●	●	●	●	●		629,168[7]	629,217[7]	10,198	69,825[8]	1,328,210
Enrico Vanni	●	●	●	●		Chair			355,000	355,022	5,754	41,010[8]	751,032
Dimitri Azar	●			●					225,000	225,020	3,647	—	450,020
Verena A. Briner	●								175,000	175,043	2,837	18,782[8]	368,825
William Brody[9]	●					●		●	262,500	262,534	4,255	—	525,034
Srikant Datar	●		●	Chair	●	●			360,000	360,020	5,835	—	720,020
Ann Fudge	●				●	●	●		250,000	250,008	4,052	—	500,008
Pierre Landolt[10]	●						Chair		—	410,058	6,646	21,349[8]	431,407
Charles L. Sawyers	●								175,000	175,043	2,837	—	350,043
Andreas von Planta	●			●	Chair		●		280,000	280,056	4,539	29,023[8]	589,079
Wendelin Wiedeking	●				●		●		—	450,040	7,294	26,893[8]	476,933
William T. Winters	●								175,000	175,043	2,837	—	350,043
Rolf M. Zinkernagel[11]	●						●	●	325,000	325,036	5,268	34,382[8]	684,418
Total[12]									**4,710,618**	**5,719,311**	**91,362**	**5,254,400**	**15,684,329**

(1) Does not include reimbursement for travel and other necessary business expenses incurred in the performance of their services as these are not compensation.

(2) The value of the shares reflected in this column has been calculated based on market value of the shares at grant date. All shares, except those granted to Joerg Reinhardt, were granted as per January 17, 2013 against the prevailing share price of CHF 61.70. Joerg Reinhardt's compensation in the form of shares was granted as per August 2, 2013 against the prevailing share price of CHF 67.55.

(3) Daniel Vasella's compensation set out in this table reflects the Chairman period from Jan 1, 2013 to Feb 22, 2013. It does not include an amount of CHF 5.1 million which Daniel Vasella received from the date of the 2013 AGM, when he stepped down as Chairman and Board member, to December 31, 2013.

(4) During his Chairmanship (i.e. until February 22, 2013), Daniel Vasella attended the meetings of these Committees as a guest without voting rights.

(5) Includes inter alia social security costs due by the individual and paid by the company, pension costs for the Chairman period as well as a one-off pension contribution.

(6) Includes social security costs due by the individual and paid by the company, pension costs and the total value of the compensation for lost entitlements at his former employer of EUR 2,665,051. Payments will be staggered based on the vesting period at his former employer, and extend over the period from 2014-2016, provided that he remains in office as our Chairman at the respective due dates. On January 31, 2014, 2015 and 2016 he will respectively receive EUR 748,000, EUR 871,251 and EUR 1,045,800. The lost entitlements were converted at a rate of EUR 1.00 = CHF 1.231, based on the exchange rates used in the Group's consolidated financial statements.

(7) Ulrich Lehner was Chairman of the Board on an ad interim basis for the period from February 22, 2013 until July 31, 2013. For this role and time interval, he received a cash compensation of CHF 395,834 and an equal payment in form of shares granted as per January 17, 2013 against the prevailing share price of CHF 61.70 (6,416 shares) and delivered on August 2, 2013.

(8) Includes social security costs due by the individual and paid by the company.

(9) The Board of Directors has delegated William Brody to the Board of Directors of the Genomics Institute of the Novartis Research Foundation (GNF).

(10) According to Pierre Landolt, the Sandoz Family Foundation is the economic beneficiary of the compensation.

(11) The Board of Directors has delegated Rolf M. Zinkernagel to the Scientific Advisory Board of the Novartis Institute for Tropical Diseases (NITD) and to the Board of Directors of the Genomics Institute of the Novartis Research Foundation (GNF).

(12) Starting in 2014, "Other" compensation includes the full amount of lost entitlements from former employers in the year an executive joins the Executive Committee or a Board member joins the Board of Directors. For consistency purposes, the lost entitlements of EUR 2,665,051 of Joerg Reinhardt are included in the 2013 Board compensation table. In addition, the employer social security contribution is not included in this table.

6.C Board Practices

Novartis strives to create sustainable value. Our corporate governance framework is designed to support this goal. While it complies with all applicable laws and implements the best corporate governance standards, it is tailor-made for Novartis.

DEAR SHAREHOLDER,

This letter is intended to share with you some key aspects of our governance approach, important developments in 2014 and what we plan for 2015.

Our mandate from you, our shareholders

The role of our Board is to represent the interests of you, our shareholders. We are accountable to you for striving to create sustainable value. This is our mandate as enshrined in article 2 of Novartis AG's Articles of Incorporation. We achieve this by setting a clear strategy for Novartis and through effective governance focused on target setting, risk management, and performance optimization to provide accountability and control.

This requires an effective Board with the right composition, structure, processes and a clear understanding of its role. The Novartis Board meets these requirements.

Our Board includes members with diverse educations, experiences, nationalities and interpersonal skills. This diversity will be further strengthened by Nancy C. Andrews joining our Board. Nancy holds a medical degree from Harvard Medical School and a Ph.D. in Biology from the Massachusetts Institute of Technology. I am therefore delighted that she has agreed to stand for election at the upcoming AGM.

We emphasize training, performance evaluation, and ongoing improvement of our Board and its members, as well as succession planning. To get an outside view on where we could improve further, in 2014 we initiated a performance and effectiveness evaluation of our Board by an independent expert company. All Board members are independent and we have established appropriate processes to ensure our Board functions effectively. These processes promote efficient and balanced decision-making, and guarantee a seamless information transfer—enabling our Board to effectively discharge its duties.

Our Board is primarily responsible for setting the strategic direction of Novartis and appointing Executive Committee members. We closely communicate with the Executive Committee, making sure our strategy is properly implemented and our ethical standards are applied. We assert independent judgment and work to build a strong relationship with the Executive Committee based on mutual respect and trust.

Our Board's decision to change the portfolio of Novartis

Perhaps the most important task of our Board is to set the strategic direction of Novartis, re-evaluate it each year, and make necessary changes. The guiding line here is the mandate from our shareholders to strive to create sustainable value. Active portfolio management is part of this role.

To fulfill this task our Board holds a dedicated two-day strategy meeting each August. At our 2013 meeting, we reviewed the Company's portfolio, examining a comprehensive proposal with recommended actions from the Executive Committee. These recommendations—supported by our Board—considered the best structure for creating shareholder value by leading in every segment in which we operate. Our Board subsequently decided in April 2014 to transform our portfolio to focus on our leading businesses—Pharmaceuticals, Alcon and Sandoz—which each have strong innovation power and global scale, while bringing our Over-the-Counter business into a joint venture, with Novartis holding a substantial minority stake.

Our strategy for these leading businesses has, in substance, not changed. It is to deliver better outcomes for patients through science-based innovation. We aim to lead in growing areas of healthcare.

To further support the implementation of our strategy, we have strengthened our Board's role in innovation by creating a Research & Development Committee. This new Board committee oversees our research and development strategy, and evaluates the effectiveness and competitiveness of our research and development organization. It reflects our Board's commitment to support and promote innovation at Novartis.

The role of the Chairman

As independent, non-executive Chairman, I provide direction to our Board and make sure we effectively collaborate with our CEO and Executive Committee.

The Chairman's role is to ensure that our Board and its committees work effectively. That includes setting the agenda, style and tone of Board discussions; promoting constructive debate and effective decision-making; and ensuring that our performance is regularly evaluated and that our members are properly trained.

In addition, the Chairman's role includes supporting and mentoring our CEO, while not interfering with the operational management of Novartis, and supporting effective communication with shareholders, so that we understand your views.

We have adapted our governance framework

We continuously strive to improve in representing the interests of all stakeholders. In 2013, we undertook an extensive review of our corporate governance framework, benchmarking it against international best practices, and identified improvement opportunities that we implemented in 2014: In addition to creating the Research & Development Committee, we extended the mandate of the Corporate Governance and Nomination Committee to cover corporate responsibility matters, and disbanded the Chairman's Committee—while further empowering the Executive Committee and accelerating decision-making. Moreover, we introduced, among others, the following elements of the rules implementing the Minder Initiative: the annual election during the Annual General Meeting (AGM) of the Chairman of the Board, and Board and Compensation Committee members; the possibility for shareholders to provide their voting instructions to the Independent Proxy electronically; and the ban of the corporate and custody proxies. We also held a non-binding say on pay vote at our AGM in 2014.

In 2015, we will implement all other elements of the rules implementing the Minder Initiative by amending our Articles of Incorporation and asking our shareholders to approve them during the 2015 AGM on February 27, 2015. Key aspects of these amendments will include determining (i) the maximum number of allowable external mandates for members of our Board and Executive Committee, (ii) the principles concerning the tasks and responsibilities of our Compensation Committee, (iii) the details concerning the procedure for the new yearly binding shareholder votes on the aggregate compensation of our Board and Executive Committee, and (iv) the principles of our compensation policy.

Key activities of our Board and its committees in 2014

In addition to the standard, recurring topics that we address at Board and committee levels (as set-out later in this report), in 2014 we focused on a number of special key topics, including deciding on and preparing for the transformation of our portfolio to focus on our leading businesses, establishing Novartis Business Services, strengthening our oversight over research and development, reviewing a number of important business development deals and investments, discussing certain key personnel decisions, preparing for the introduction of the rules implementing the Minder Initiative, optimizing our compensation system and enterprise risk management, strengthening our compliance regime, and revising our company values and behaviors to make them more focused and further emphasizing collaboration and high ethical standards.

The importance of shareholder engagement

Shareholder engagement is critical to the long-term success of our company. It should be conducted in an atmosphere of trust and respect that promotes a collaborative dialogue between Novartis and our shareholders—with views and positions expressed openly to enhance mutual understanding. As part of these efforts, we have established regular meetings of our governance specialists with their respective peers from shareholder groups. I have personally met with many of our shareholders and intend to continue this dialogue.

Joerg Reinhardt

Chairman of the Board of Directors

SUMMARY OF OUR CORPORATE GOVERNANCE APPROACH

GOVERNANCE BODIES

Leadership Structure

Independent, non-executive Chairman and separate CEO

Board Governance

Structure

All Board members are independent.

The Board has assigned responsibilities to five committees:

– Audit and Compliance Committee

– Compensation Committee

– Governance, Nomination and Corporate Responsibilities Committee

– Research & Development Committee

– Risk Committee

Composition

Board members have diverse educations, experience, nationalities and interpersonal skills. Their biographies (see "—Item 6.A Directors and Senior Management") describe their specific qualifications.

Processes

The Board's processes have a decisive influence on its effectiveness. The Board has implemented best practices for all such processes. Important elements include Board meeting agendas (to address all important topics), information submitted to the Board (to ensure the Board receives sufficient

information from management to perform its supervisory duty and to make decisions that are reserved for it), and boardroom behavior (to promote an efficient and balanced decision-making process).

Board and Executive Compensation

Information on Board and executive compensation is outlined in our Compensation Report. See "—Item 6.B Compensation".

Full Implementation of Minder Initiative

In 2015, all elements of the rules implementing the Minder Initiative will be fully introduced with the amendment of the Articles of Incorporation of Novartis AG (AoI). The key content of the AoI will be set-out in the 2015 Corporate Governance Report, including information on the maximum number of board mandates of Board and Executive Committee members and on the rules for the vote on pay at the general meeting of shareholders.

OUR SHARES AND OUR SHAREHOLDERS

Our Shares

Share Capital of Novartis AG

As of December 31, 2014, the share capital of Novartis AG is CHF 1,353,096,500 fully paid-in and divided into 2,706,193,000 registered shares, each with a nominal value of CHF 0.50. Novartis has neither authorized nor conditional capital. There are no preferential voting shares; all shares have equal voting rights. No participation certificates, non-voting equity securities (Genussscheine) or profit-sharing certificates have been issued.

Novartis shares are listed and traded on the SIX Swiss Exchange (Valor No. 001200526, ISIN CH0012005267, symbol: NOVN), as well as on the New York Stock Exchange (NYSE) in the form of American Depositary Receipts (ADRs) representing Novartis American Depositary Shares (ADSs) (Valor No. 567514, ISIN US66987V1098, symbol: NVS).

The holder of an ADR has the rights enumerated in the Deposit Agreement (such as the right to give voting instructions and to receive a dividend). The ADS depositary of Novartis—JPMorgan Chase Bank, New York—holding the Novartis shares underlying the ADRs, is registered as a shareholder in the share register of Novartis. An ADR is not a Novartis share and an ADR holder is not a Novartis shareholder. ADR holders exercise their voting rights by instructing the depositary to exercise their voting rights. Each ADR represents one Novartis share.

Changes in Share Capital

During the last three years, the following changes took place to the share capital of Novartis AG:

In 2012, Novartis reduced its share capital by CHF 19.7 million (from CHF 1,372,811,500 to CHF 1,353,096,500) by cancelling 39.43 million shares repurchased on the second trading line during 2011. In 2013 and in 2014, the share capital of Novartis did not change.

Capital Changes

Year	As of Jan 1	Changes in shares	As of Dec 31	Changes in CHF
2012	2,745,623,000	(39,430,000)	2,706,193,000	(19,715,000)
2013	2,706,193,000		2,706,193,000	
2014	2,706,193,000		2,706,193,000	

Convertible or Exchangeable Securities

Novartis has not issued convertible or exchangeable bonds, warrants, options or other securities granting rights to Novartis shares, other than options (and similar instruments such as Stock Appreciation Rights) granted under or in connection with equity-based participation plans of associates.

Share Repurchase Programs

At the Annual General Meeting (AGM) in February 2008, shareholders authorized the Board to repurchase shares up to a maximum amount of CHF 10 billion via a second trading line on the SIX Swiss Exchange. In 2008, a total of 6 million shares were repurchased at an average price of CHF 49.42 per share and cancelled. The share repurchases were suspended in April 2008 in favor of debt repayment. In December 2010, the Board announced the reactivation of the share repurchases to minimize dilution to existing Novartis shareholders in connection with the proposed merger of Alcon, Inc. into Novartis. In 2011, 39,430,000 shares were repurchased at an average price of CHF 52.81 per share and cancelled. In 2012, no shares were repurchased. On November 22, 2013, Novartis announced it would buy back shares via the second trading line of up to $5 billion spread over two years as part of the sixth program. In 2013, 2,160,000 shares were repurchased at an average price of CHF 70.58 per share. In 2014, 27,040,000 shares were repurchased at an average price of CHF 81.18 per share on the second trading line.

Share developments

Share developments in 2014

– Swiss-listed Novartis shares rise 30% to CHF 92.35

– American Depositary Receipts (ADRs) rise 15% to $92.66

Novartis shares finished at CHF 92.35, an increase of 30% from the 2013 year-end closing price of CHF 71.20. The Novartis American Depositary Receipts (ADRs) increased by 15% to $92.66 from $80.38 in 2013. The Swiss Market Index (SMI) in comparison rose at 9.5% in 2014, whereas the world pharmaceutical index (MSCI) grew by 10.6% in the year. Total shareholder return in 2014 was 34% in CHF and 20% in $. Over a longer-term period, Novartis has consistently delivered a solid performance, providing a 10.7% compounded annual total shareholder return between January 1, 1996, and December 31, 2014, exceeding the 9.2% compounded returns of its large pharmaceutical peers (see "—Item 6.B Compensation—Benchmark Companies") or the returns of 9.5% of the world pharmaceutical index (MSCI).

The market capitalization of Novartis based on the number of shares outstanding (excluding treasury shares) amounted to $224 billion as of December 31, 2014, compared to $194 billion as of December 31, 2013.

Continuously rising dividend since 1996

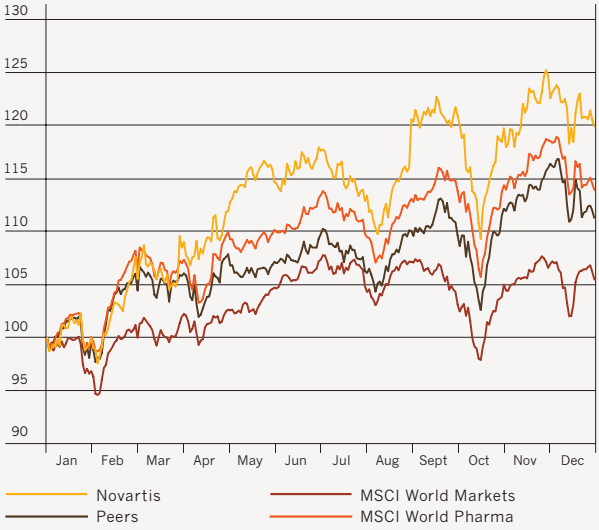
The Board proposes a 6% increase in the dividend payment for 2014 to CHF 2.60 per share (2013: CHF 2.45) for approval at the AGM on February 27, 2015. This represents the 18th consecutive increase in the dividend paid per share since the creation of Novartis in December 1996. If the 2014 dividend proposal is approved by shareholders, dividends to be paid out will amount to approximately $6.4 billion (2013: $6.8 billion), resulting in an expected payout ratio of 63% of net income attributable to Novartis shareholders (2013: 74%) at December 31, 2014 exchange rates. Using the CHF/$ January 21, 2015, exchange rate of 1.14, dividends to be paid out would amount to approximately $7.2 billion, resulting in an expected payout ratio of 71% of net income attributable to Novartis shareholders. Based on the 2014 year-end share price of CHF 92.35, the dividend yield will be 2.8% (2013: 3.4%). The dividend payment date has been set for March 5, 2015.

Direct Share Purchase Plan

Novartis offers a Direct Share Purchase Plan to investors residing in Switzerland. It provides an easy and inexpensive way for investors to directly purchase Novartis registered shares and for them to be held at no cost in a deposit account with SIX SAG AG. Due to legal restrictions, investors residing outside Switzerland may not participate in the plan. At the end of 2014, a total of 7,740 shareholders were enrolled in this plan.

NOVARTIS 2014 SHARE PRICE MOVEMENT

(Based on $ amounts)



NOVARTIS 1996–2014 TOTAL SHAREHOLDER RETURN

(Based on $ amounts)

Source: Datastream, data are converted into US Dollars and re-based to 100 at January 1, 1996. Currency fluctuations have an influence on the representation of the relative performance of Novartis versus indices and peers.

Key Novartis Share Data	2014	2013
Issued shares	**2,706,193,000**	**2,706,193,000**
Treasury shares[1]	307,566,743	280,108,692
Outstanding shares at December 31	**2,398,626,257**	**2,426,084,308**
Average number of shares outstanding	**2,425,782,324**	**2,440,849,805**

(1) Approximately 153 million treasury shares (2013: 149 million) are held in entities that restrict their availability for use.

Per-share information[1]	2014	2013
Basic earnings per share ($)	4.21	3.76
Diluted earnings per share ($)	4.13	3.70
Operating cash flow ($)	5.73	5.40
Year-end equity for Novartis AG shareholders ($)	29.50	30.64
Dividend (CHF)[2]	2.60	2.45

(1) Calculated on the average number of shares outstanding, except year-end equity.

(2) 2014: Proposal to shareholders for approval at the Annual General Meeting on February 27, 2015.

Key ratios—December 31	2014	2013
Price/earnings ratio[1]	22.2	21.3
Enterprise value/EBITDA	14	13
Dividend yield (%)[1]	2.8	3.4

(1) Based on the Novartis share price at December 31 of each year.

Key data on ADRs issued in the US	2014	2013
Year-end ADR price ($)	92.66	80.38
High[1]	96.65	80.39
Low[1]	78.20	63.70
Number of ADRs outstanding[2]	307,623,364	317,193,803

(1) Based on the daily closing prices.

(2) The depositary, JPMorgan Chase Bank, holds one Novartis AG share for every American Depositary Receipt (ADR) issued.

Share price (CHF)	2014	2013
Year-end share price	92.35	71.20
High[1]	93.80	73.65
Low[1]	70.65	58.70
Year-end market capitalization ($ billions)[2]	**223.7**	**194.2**
Year-end market capitalization (CHF billions)[2]	**221.5**	**172.7**

(1) Based on the daily closing prices.

(2) Market capitalization calculated based on the number of shares outstanding (excluding treasury shares).

Our Shareholders

Significant Shareholders

According to the share register, as of December 31, 2014, the following registered shareholders (including nominees and the ADS depositary) held more than 2% of the total share capital of Novartis AG with the right to vote these shares:[1]

- Shareholders: Novartis Foundation for Employee Participation, with its registered office in Basel, Switzerland, holding 3.2%; and Emasan AG, with its registered office in Basel, Switzerland, holding 3.3%
- Nominees: JPMorgan Chase Bank, New York, holding 9.1%; Nortrust Nominees, London, holding 3.2%; and The Bank of New York Mellon, New York, holding 4.6% through its nominees, Mellon Bank, Everett, 2.6% and The Bank of New York Mellon, Brussels, 2.0%
- ADS depositary: JPMorgan Chase Bank, New York, holding 11.4%.

According to disclosure notifications filed with Novartis AG and the SIX Swiss Exchange, each of the following shareholders held between 3% and 5% of the share capital of Novartis AG as of December 31, 2014:

- Capital Group Companies, Inc., Los Angeles, USA
- BlackRock, Inc., New York, USA

1 Excluding 5.7% of the share capital held by Novartis AG and its subsidiaries (excluding foundations) as treasury shares.

Disclosure notifications pertaining to shareholdings in Novartis AG that were filed with Novartis AG and the SIX Swiss Exchange are published on the latter's electronic publication platform, and can be accessed via the database search page:

http://www.six-exchange-regulation.com/obligations/disclosure/major_shareholders_en.html.

Novartis has not entered into any agreement with any shareholder regarding the voting or holding of Novartis shares.

Cross Shareholdings

Novartis has no cross shareholdings in excess of 5% of capital or voting rights with any other company.

Distribution of Novartis Shares

The information in the following tables relates only to registered shareholders and does not include holders of unregistered shares. Also, the information provided in the tables below cannot be assumed to be representative of the entire Novartis investor base because nominees and JPMorgan Chase Bank, as ADS depositary, are registered as shareholders for a large number of beneficial owners.

As of December 31, 2014, Novartis had approximately 150,000 registered shareholders.

Number of Shares Held As of December 31, 2014	**Number of registered shareholders**	**% of registered share capital**
1-100	20,105	0.05
101-1'000	89,754	1.44
1'001-10'000	36,011	3.75
10'001-100'000	3,325	3.24
100'001-1'000'000	446	4.98
1'000'001-5'000'000	71	5.66
5'000'001 or more[1]	33	51.06
Total registered shareholders/shares	149,745	70.18
Unregistered shares		29.82
Total		**100.00**

(1) Including significant registered shareholders as listed above

Registered Shareholders by Type As of December 31, 2014	**Shareholders in %**	**Shares in %**
Individual shareholders	96.04	11.54
Legal entities	3.88	39.41
Nominees, fiduciaries and ADS depositary	0.08	49.05
Total	**100.00**	**100.00**

Registered Shareholders by Country As of December 31, 2014	Shareholders in %	Shares in %
France	2.65	0.98
Germany	5.10	3.85
Switzerland[1]	88.80	40.86
United Kingdom	0.48	3.37
United States	0.28	46.70
Other countries	2.69	4.24
Total	**100.00**	**100.00**

(1) Excluding 5.7% of the share capital held by Novartis AG, together with Novartis affiliates, as treasury shares

Shareholder Rights

Shareholders have the right to receive dividends, to vote and to execute such other rights as granted under Swiss law and Novartis AG's Articles of Incorporation.

Right to vote ("one share, one vote")

Each share registered with the right to vote entitles the holder to one vote at General Meetings. Shares can only be voted if they are registered with voting rights with the Novartis share register by the third business day before the General Meeting.

ADR holders may vote by instructing JPMorgan Chase Bank, the ADS depositary, to exercise the voting rights attached to the registered shares underlying the ADRs. JPMorgan Chase Bank exercises the voting rights for registered shares underlying ADRs for which no voting instructions have been given by providing a discretionary proxy to an uninstructed independent designee. Such designee has to be a shareholder of Novartis.

Powers of General Meetings

The following powers are vested exclusively in the General Meeting:

- Adoption and amendment of the Articles of Incorporation
- Election and removal of the Chairman of the Board, Board and Compensation Committee members, the Independent Proxy and the external auditors
- Approval of the operational and financial review of Novartis AG and of the consolidated financial statements
- Approval of the statutory financial statements of Novartis AG and decision on the appropriation of available earnings shown on the balance sheet, including with regard to dividends
- Approval of the aggregate amounts of compensation of the Board and Executive Committee (as from 2015)
- Grant of discharge to Board and Executive Committee members
- Decision of other matters that are reserved by law or by the Articles of Incorporation to the General Meeting of Shareholders

Resolutions and elections at General Meetings

The General Meeting passes resolutions and elections with the absolute majority of the votes represented at the meeting. However, under the Articles of Incorporation

(www.novartis.com/corporate-governance), the approval of two-thirds of the votes represented at the meeting is required for:

– An alteration of the purpose of Novartis AG

– The creation of shares with increased voting powers

– An implementation of restrictions on the transfer of registered shares and the removal of such restrictions

An authorized or conditional increase of the share capital

– An increase of the share capital out of equity, by contribution in kind, for the purpose of an acquisition of property, or the grant of special rights

– A restriction or suspension of rights or options to subscribe

– A change of location of the registered office of Novartis AG

– The dissolution of Novartis AG

In addition, the law provides for a qualified majority for other resolutions, such as a merger or spin-off.

Other shareholder rights

Shareholders representing at least 10% of the share capital may request that an extraordinary General Meeting of Shareholders be convened. Additionally, those representing shares with an aggregate nominal value of at least CHF 1 million may request that an item be included in a General Meeting agenda. Such requests must be made in writing at least 45 days before the meeting, specify the agenda item to be included, and contain the proposal on which the shareholder requests a vote.

Shareholders can vote their shares by themselves or appoint another shareholder or the Independent Proxy to vote on their behalf. All shareholders (who are not yet registered on the Sherpany Platform; see below) receive a General Meeting invitation letter with a proxy appointment form for the appointment of the Independent Proxy. On this form shareholders can instruct the Independent Proxy to vote on alternative or additional motions related to the agenda items either (i) according to the motions of the Board for such alternative or additional motions, or (ii) against such alternative or additional motions, or (iii) to abstain from voting.

Novartis offers to shareholders the possibility to use an online platform (the "Sherpany Platform") and thus to receive notices of future General Meetings exclusively by e-mail and to electronically give their instructions to the Independent Proxy, grant powers of attorney to other shareholders or to order their admission card online. The General Meeting registration form allows shareholders that are not yet registered on the Sherpany Platform to order the detailed documents related to opening a Sherpany account. In addition, they may do so by contacting the Novartis Share Registry. Shareholders can deactivate their online account at any time and again receive invitations in paper form.

The right to vote and other rights associated with a registered share may only be exercised by a shareholder, or a usufructuary (a person not the owner of the share who is entitled to exercise the shareholder rights) or nominee who is registered in the Novartis share register.

Shareholder Registration

Only shareholders, usufructuaries or nominees registered in the Novartis share register with voting rights may exercise their voting rights. To be registered with voting rights, a shareholder must declare that he or she acquired the shares in his or her own name and for his or her own account. According to the

Articles of Incorporation, the Board may register nominees with the right to vote. For restrictions on registration of nominees, please see below.

The Articles of Incorporation provide that no shareholder shall be registered with the right to vote for more than 2% of the registered share capital. The Board may, upon request, grant an exemption from this restriction. Considerations include whether the shareholder supports the Novartis goal of creating sustainable value and has a long-term investment horizon. In 2014, no exemptions were requested. Exemptions are in force for the registered Significant Shareholders listed under—Our Shareholders—Shareholdings—Significant Shareholders, and for Norges Bank (Central Bank of Norway), Oslo, which as of December 31, 2014 held less than 2% of the share capital of Novartis AG.

The same registration and voting restrictions indirectly apply to holders of ADRs.

Given that shareholder representation at General Meetings traditionally has been low in Switzerland, Novartis considers registration restrictions necessary to prevent a minority shareholder from dominating a General Meeting.

The Articles of Incorporation provide that no nominee shall be registered with the right to vote for more than 0.5% of the registered share capital. The Board of Directors may, upon request, grant an exemption from this restriction if the nominee discloses the names, addresses and the number of shares of the persons for whose account it holds 0.5% or more of the registered share capital. Exemptions are in force for the nominees listed under—Our Shareholders—Shareholdings—Significant Shareholders.

The same restrictions indirectly apply to holders of ADRs.

Registration restrictions in the Articles of Incorporation may only be removed through a resolution of the General Meeting of Shareholders, with approval of at least two-thirds of the votes represented at the meeting.

Shareholders, ADR holders or nominees who are linked to each other or who act in concert to circumvent registration restrictions are treated as one person or nominee for the purposes of the restrictions on registration.

No Restriction on Trading of Shares

No restrictions are imposed on the transferability of Novartis shares. The registration of shareholders in the Novartis share register or in the ADR register kept by JPMorgan Chase Bank does not affect the tradability of Novartis shares or ADRs. Registered Novartis shareholders or ADR holders may, therefore, purchase or sell their Novartis shares or ADRs at any time, including before a General Meeting regardless of the record date. The record date serves only to determine the right to vote at a General Meeting.

Change-of-Control Provisions

No opting up, no opting out

According to the Swiss Stock Exchange Act, anyone who—directly, indirectly or acting in concert with third parties—acquires equity securities exceeding 33⅓% of the voting rights of a company (whether or not such rights are exercisable) is required to make an offer to acquire all listed equity securities of that company. A company may raise this threshold to 49% of the voting rights (“opting up”) or may, under certain circumstances, waive the threshold (“opting out”). Novartis has not adopted any such measures.

Change-of-control clauses

In accordance with good corporate governance and the rules implementing the Minder Initiative, there are no change-of-control clauses benefiting Board members, Executive Committee members or other members of management, and employment contracts with Executive Committee members do not

contain notice periods or contract periods exceeding 12 months, commissions for the acquisition or transfer of enterprises or severance payments.

OUR BOARD OF DIRECTORS

COMPOSITION OF THE BOARD OF DIRECTORS AND ITS COMMITTEES (AS PER DECEMBER 31, 2014)

Election and Term of Office

All Board members are elected individually.

The Chairman and members of the Board and Compensation Committee are re-elected annually and individually by shareholders at the General Meeting.

The average tenure of Board members is six years. A Board member must retire after reaching the age limit of 70. Under special circumstances, shareholders may grant an exemption from this rule and re-elect a Board member for additional terms of office. There is no mandatory term limit for Board members, so as not to lose the value of the insight and knowledge of the Company's operations and practices that long-serving Board members have developed.

Name	Nationality	Year of birth	First election at AGM	Last election at AGM	End of current Term
Joerg Reinhardt, Ph.D.	D	1956	2013	2014	2015
Ulrich Lehner, Ph.D.	D	1946	2002	2014	2015
Enrico Vanni, Ph.D.	CH	1951	2011	2014	2015
Dimitri Azar, M.D., MBA	US	1959	2012	2014	2015
Verena A. Briner, M.D.	CH	1951	2013	2014	2015
Srikant Datar, Ph.D.	US	1953	2003	2014	2015
Ann Fudge	US	1951	2008	2014	2015
Pierre Landolt, Ph.D.	CH	1947	1996	2014	2015
Andreas von Planta, Ph.D.	CH	1955	2006	2014	2015
Charles L. Sawyers, M.D.	US	1959	2013	2014	2015
William T. Winters	UK/US	1961	2013	2014	2015

Board Profile

Composition of the Board

The composition of the Board must align with our status as a listed company, business portfolio, geographic reach and culture. The Board has to be diverse in all aspects of diversity and it must be big enough to staff the five Board committees without an excessive overlap of personnel, and, to enable the individual Board members to have enough time to fulfill their tasks adequately.

Knowledge and experience in the following fields must be represented on the Board: leadership and management, healthcare, life sciences and medicine, research and development, engineering and technology, manufacturing and marketing, banking, finance and accounting, legal and public affairs, and risk management.

Individual Board Member Profile

Individual Board members should have the following personal qualities:

- Interact with other Board members to build an effective and complementary Board
- Build trusting relationships
- Apply independence of thought
- Be challenging but supportive in the boardroom
- Influence without creating conflict by applying a constructive, non-confrontational style
- Offer advice based on sound judgment while also being good listeners
- Be able and willing to commit adequate time to Board and committee responsibilities
- Be open to personal feedback and seek to become more effective
- Do not have existing board memberships or hold other positions that could lead to a conflict of interest
- Understand and respect the boundaries of their role, leaving the operational management of the Company to the CEO and his Executive Committee

The biographies of the Board members (see "—Item 6.A Directors and Senior Management") set out the particular qualifications that led the Board to conclude that a Board member is qualified to serve on the Board, creating a Board that today is diverse in terms of background, qualifications, interests and skills.

Board Diversity

The diversity of a board of directors is a critical success factor for its effectiveness. Thus, when the Governance, Nomination and Corporate Responsibilities Committee identifies new Board member candidates to propose to the shareholders for election, the maintenance and improvement of the diversity of the Board is an important criterion. The Board's aspiration is to have a diverse Board in all its aspects. This includes geographic origin, background, gender, race, faith, education, experience, viewpoint, interests and technical and interpersonal skills.

Role of the Board and its Committees

The Board is responsible for the overall direction and supervision of management and holds the ultimate decision-making authority for Novartis AG, except for those decisions reserved to shareholders.

The Board has delegated certain responsibilities to five committees, as set out below. The responsibilities described below with the terms "overseeing" or "reviewing" are subject to final approval by the Board. These committees enable the Board to work in an efficient and effective manner, ensuring a thorough review and discussion of issues, while giving the Board more time to deal with non-technical matters. Moreover, through committees, it is possible to make sure that only Board members who are independent oversee audit and compliance, governance and compensation as only independent Board members are delegated in the respective committees.

Responsibilities	Membership comprises	Number of meetings held in 2014/approximate average duration (hrs) of each meeting Attendance	Link
The Board of Directors		**8/7:30**	
The primary responsibilities of the Board of Directors include: —Setting the strategic direction of the Group; —Determining the organizational structure and governance of the Group; —Appointing, overseeing and dismissing key executives and planning their succession; —Determining and overseeing the financial planning, accounting, reporting and controlling; —Approving the annual financial statements and the corresponding financial results releases; and —Approving major transactions and investments.	Joerg Reinhardt Ulrich Lehner Enrico Vanni Dimitri Azar Verena A. Briner Srikant Datar Ann Fudge Pierre Landolt Andreas von Planta Charles L. Sawyers William T. Winters	8 6 8 8 8 8 8 8 8 8 8	Articles of Incorporation of Novartis AG Regulations of the Board of Directors, its Committees and the Executive Committee of Novartis AG (Board Regulations) http://www.novartis.com/corporate-governance
The Audit and Compliance Committee		**7/3:00**	
The primary responsibilities of this committee include: —Overseeing the internal auditors; —Supervising the external auditors and selecting and nominating the external auditors for election by the meeting of shareholders; —Overseeing the accounting policies, financial controls and compliance with accounting and internal control standards; —Approving quarterly financial statements and financial results releases; —Overseeing internal control and compliance processes and procedures; and —Overseeing compliance with laws and external and internal regulations. The Audit and Compliance Committee has the authority to retain external consultants and other advisors.	Srikant Datar Dimitri Azar Ulrich Lehner[2] Enrico Vanni Andreas von Planta	7 7 6 7 7	Charter of the Audit and Compliance Committee http://www.novartis.com/corporate-governance

Responsibilities	Membership comprises	Number of meetings held in 2014/approximate average duration (hrs) of each meeting Attendance	Link
The Risk Committee		**4/2:00**	
The primary responsibilities of this committee include: —Ensuring that Novartis has implemented an appropriate and effective risk management system and process; —Ensuring that all necessary steps are taken to foster a culture of risk-adjusted decision making without constraining reasonable risk-taking and innovation; —Approving guidelines and reviewing policies and processes; and —Reviewing with management, internal auditors and external auditors the identification, prioritization and management of the risks, the accountabilities and roles of the functions involved with risk management, the risk portfolio and the related actions implemented by management. The Risk Committee has the authority to retain external consultants and other advisors.	Andreas von Planta Verena Briner Srikant Datar Ann Fudge	4 4 4 4	Charter of the Risk Committee http://www.novartis.com/corporate-governance

(1) Chairman

(2) Audit Committee Financial Expert as defined by the US Securities and Exchange Commission (SEC)

Responsibilities	Membership comprises	Number of meetings held in 2014/approximate average duration (hrs) of each meeting Attendance	Link
The Compensation Committee		**6/3:00**	
The primary responsibilities of this committee include: —Designing, reviewing and recommending to the Board compensation policies and programs; —Advising the Board on the compensation of the Board members and the Chief Executive Officer, and —Deciding on the compensation of the members of the Executive Committee. The Compensation Committee has the authority to retain external consultants and other advisors.	Enrico Vanni Srikant Datar Ann Fudge Ulrich Lehner	6 6 6 5	Charter of the Compensation Committee http://www.novartis.com/corporate-governance

Responsibilities	Membership comprises	Number of meetings held in 2014/approximate average duration (hrs) of each meeting Attendance	Link
The Governance, Nomination and Corporate Responsibilities Committee		**4/2:00**	
The primary responsibilities of this committee include: —Designing, reviewing and recommending to the Board corporate governance principles; —Reviewing on a regular basis the Articles of Incorporation with a view to reinforcing shareholder rights; —Reviewing on a regular basis the composition and size of the Board and its committees; —Reviewing annually the independence status of each Board member; —Reviewing directorships and agreements of Board members for conflicts of interest and dealing with conflicts of interest; —Identifying candidates for election as Board member; —Assessing existing Board members and recommending to the Board whether they should stand for re-election; —Preparing and reviewing the succession plan for the CEO; —Developing and reviewing an orientation program for new Board members and an ongoing education plan for existing Board members; and —Overseeing the Company's strategy and governance on corporate responsibility. The Governance, Nomination and Corporate Responsibilities Committee has the authority to retain external consultants and other advisors.	Pierre Landolt Ann Fudge Ulrich Lehner Andreas von Planta	4 4 4 4	Charter of the Governance, Nomination and Corporate Responsibilities Committee http://www.novartis.com/corporate-governance

Responsibilities	Membership comprises	Number of meetings held in 2014/approximate average duration (hrs) of each meeting Attendance	Link
The Research & Development Committee		**3/8:00**	
The primary responsibilities of this committee include: —Monitoring research and development and bringing recommendations to the Board; —Assisting the Board in the oversight, evaluation and decision making related to research and development; —Informing the Board on a periodic basis on the research and development strategy, the effectiveness and competitiveness of the research and development function, on emerging scientific trends and activities, critical to the success of research and development and on the pipeline; —Advising the Board on scientific, technological and research and development matters; —Providing counsel and know how to management in the area of research and development; and —Reviewing such other matters in relation to Novartis' research and development as the committee may, in its own discretion, deem desirable in connection with its responsibilities. The Research & Development Committee has the authority to retain external consultants and other advisors.	Joerg Reinhardt Dimitri Azar Charles L. Sawyers Enrico Vanni	3 3 3 3	Charter of the Research &Development Committee http://www.novartis.com/corporate-governance

(1) Chairman

The Functioning of the Board

The Board takes decisions as a whole, supported by its five committees. Each committee has a written charter outlining its duties and responsibilities and is led by a Board-elected chairman.

The Board and its committees meet regularly throughout the year. The chairmen set their meeting agendas. Any Board member may request a Board or committee meeting, and the inclusion of an agenda item. Before meetings, Board members receive materials to help them prepare the discussions and decision making.

The Chairman

Joerg Reinhardt has been acting as independent, non-executive Chairman since August 1, 2013. He has both industry and Novartis experience, and meets the Company's independence criteria. As independent Chairman, Joerg Reinhardt can lead the Board to represent the interests of shareholders, being accountable to them, and creating sustainable value through an effective governance of Novartis. The independent Chairmanship also ensures an appropriate balance of power between the Board and the Executive Committee.

In his role as independent, non-executive Chairman Joerg Reinhardt:

– Provides leadership to the Board

– Supports and advises the CEO

– Supported by the Governance, Nomination and Corporate Responsibilities Committee, ensures effective succession plans on the Board, and also ensures such plans on Executive Committee levels

– Ensures that the Board and its committees work effectively

– Sets the agenda, style and tone of Board discussions, promoting constructive dialogue and effective decision-making

– Supported by the Governance, Nomination and Corporate Responsibilities Committee, ensures that all Board committees are properly established, composed and operated

– Ensures that the performance of the Board is evaluated on an annual basis

– Ensures introduction programs for new Board members and continuing education for all Board members

– Ensures effective communication with the Company's shareholders

– Promotes effective relationships and communications between Board and Executive Committee members

Board Meetings

The Board of Directors has meetings with the members of the Executive Committee as well as private meetings without members of the Executive Committee.

In 2014, there were 8 Board meetings. Because all Board members are independent, no separate meetings of the independent Board members were held in 2014.

Board meeting agendas in 2014 included the following topics: Annual Report and media release, General Meeting agenda, Group targets, the CEO's personal objectives (January meeting), pipeline update, mergers and acquisitions and business development and licensing review (April meeting), strategy (separate, dedicated two-day meeting in August), financial and business reviews (at each meeting), and major projects, investments and transactions (when required).

Topics addressed during private meetings included Board self-evaluation and performance assessment of senior management (January meeting), as well as succession planning (August meeting).

Honorary Chairmen

Dr. Alex Krauer and Dr. Daniel Vasella have been appointed Honorary Chairmen in recognition of their significant achievements on behalf of Novartis. They are not provided with Board documents and do not attend Board meetings.

Independence of Board Members

The independence of Board members is a key corporate governance issue. An independent Board member is one who is independent of management and has no business or relationship that could materially interfere with the exercise of objective, unfettered and independent judgment. Only with a majority of Board members being independent can the Board fulfill its obligation to represent the interests of shareholders, being accountable to them, and creating sustainable value through an effective governance of Novartis. Accordingly, Novartis established independence criteria based on international best-practice standards and outlined on the Novartis website:

www.novartis.com/investors/governance-documents.shtml.

– The Novartis independence criteria require that the majority of Board members and any member of the Audit and Compliance Committee; the Compensation Committee; and the Governance, Nomination and Corporate Responsibilities Committee must meet Novartis' independence criteria. These include, inter alia, (i) a Board member not having received compensation of more than $120 000 per year from Novartis, except for Board compensation, (ii) a Board member not having been within the last three years an employee of Novartis, (iii) a family member not having been within the last three years an executive officer of Novartis, (iv) a Board member or family member not being employed by the external auditor of Novartis, (v) a Board member or family member not being a board member, employee or 10% shareholder of an enterprise that has made payments to, or received payments from, Novartis, in excess of the greater of $1 million or 2% of that enterprise's gross revenues. For members of the Audit and Compliance Committee and the Compensation Committee even stricter rules apply.

– In addition, Board members are bound by the Novartis Conflict of Interest Policy, which prevents a Board member's potential personal interests from influencing the decision-making of the Board.

– The Governance, Nomination and Corporate Responsibilities Committee annually submits to the Board a proposal concerning the determination of the independence of each Board member. For this assessment, the committee considers all relevant facts and circumstances of which it is aware—not only the explicit formal independence criteria. This includes an assessment of whether a Board member is truly independent, in character and judgment, from any member of the senior management and from any of his/her current or former colleagues.

In its meeting of December 11, 2014, the Board determined that all of its members are independent.

Relationship of Non-Executive Board Members with Novartis

No Board member is or was a member of the management of Novartis AG or of any other Novartis Group company in the last three financial years up to December 31, 2014.

There are no significant business relationships of any Board member with Novartis AG or with any other Novartis Group company.

Performance and Effectiveness Evaluation of the Board

Process

The Board conducts an annual review to evaluate its performance, and that of individual committees and members. As part of this process, each Board member completes a questionnaire on the performance and effectiveness of the Board and his/her committees, which lays the groundwork for a deep, qualitative review led by the Chairman. The Chairman has individual discussions with each Board member, followed by discussions with the entire Board and each committee. Any identified point for improvement is recorded and actions are agreed upon.

Periodically, this process is conducted by an independent consultant. In 2014, an independent performance and effectiveness evaluation of the Board and its committees including an individual Board member assessment was conducted by the independent expert company Russell Reynolds Associates. Participants in the evaluation were all members of the Board and a selected group of members of the Executive Committee of Novartis. The evaluation included a questionnaire on the performance and the effectiveness of the Board, followed by an interview with each individual conducted by Russell Reynolds Associates. While the members of the Executive Committee of Novartis received the same questionnaire as Board members, they did not participate in the individual Board member assessment.

Content and Results

The performance review examined the performance and effectiveness, and strengths and weaknesses of individual Board members, and of the full Board and each Board committee.

The review covered topics including composition of the Board; purpose, scope and responsibilities; processes and governance of the Board and its committees; meetings and pre-reading material; team effectiveness; leadership and culture.

The review also evaluated the ability and willingness of each Board member to commit adequate time and effort to his/her responsibilities as provided for in the Charter of the Governance, Nomination and Corporate Responsibilities Committee.

The results of the 2014 performance and effectiveness evaluation were discussed at the January 2015 meeting of the Board. It was concluded that the Board and its committees operate effectively, with high commitment by the Board members. Progress in a number of areas, including a cultural change within the Board, was noted. Room for improvement was seen in areas including diversity and succession planning for Board members.

Information and Control Systems of the Board vis-a-vis Management

Information on the Management

The Board ensures that it receives sufficient information from the Executive Committee to perform its supervisory duty and to make decisions that are reserved for it.

The Board obtains the information required to perform its duties through several means:

- The CEO informs the Board regularly about current developments
- Executive Committee meeting minutes are made available to the Board
- Meetings or teleconferences are held as required between Board members and the CEO
- The Board regularly meets with all Executive Committee members
- The Board receives detailed, quarterly updates from each Division Head
- By invitation, other members of management attend Board meetings to report on areas of the business for which they are responsible
- Board members are entitled to request information from Executive Committee members or any other Novartis associate, and they may visit any Novartis site

Board Committees

Board committees regularly meet with management and, at times, outside consultants to review the business, better understand applicable laws and policies affecting the Group, and support the Board and management in meeting the requirements and expectations of stakeholders and shareholders.

In particular, the Chief Financial Officer, the Group General Counsel, and representatives of the external auditors are invited to Audit and Compliance Committee meetings. Additionally, the heads of Internal Audit, Financial Reporting and Accounting, Compliance and Quality, as well as the business practices officers, report on a regular basis to the Audit and Compliance Committee. This committee reviews financial reporting processes on behalf of the Board. For each quarterly and annual release of financial information, the Disclosure Review Committee is responsible for ensuring the accuracy and completeness of disclosures. The Disclosure Review Committee, which is a management committee, is chaired by the CFO and includes the CEO, the Group General Counsel, division heads, the heads of finance of the divisions, and the heads of the following corporate functions: Treasury, Tax, Financial Reporting and Accounting, Internal Audit and Investor Relations. The Audit and Compliance Committee reviews decisions made by the Disclosure Review Committee before the quarterly and annual releases are published.

The Risk Committee oversees the risk management system and processes, and also reviews the risk portfolio of the Group to ensure appropriate and professional risk management. For this purpose, the Corporate Risk Management function and the risk owners of the divisions report on a regular basis to the Risk Committee. The Group General Counsel, the Global Head of Internal Audit, and the Global Head of Corporate Responsibility are also invited to these meetings.

Novartis Management Information System

Novartis produces comprehensive, consolidated (unaudited) financial statements on a monthly basis for the total Group and its divisions. These are typically available within 10 days of the end of the month and include the following:

- Consolidated income statement of the month, quarter-to-date and year-to-date in accordance with International Financial Reporting Standards (IFRS), as well as adjustments to arrive at core results as defined by Novartis. The IFRS and core figures are compared to the prior-year period and targets in both $ and on a constant currency basis
- Consolidated balance sheet as of the month end in accordance with IFRS in $
- Consolidated cash flow on a monthly, quarter-to-date and year-to-date basis in accordance with IFRS in $
- Supplementary data on a monthly, quarterly and year-to-date basis such as free cash flow, gross and net liquidity, headcount, personnel costs, working capital, and earnings per share on a $ basis where applicable

The above information is made available to Board members on a monthly basis. An analysis of the key deviations from prior year or target is also provided.

The Board also receives twice a year an outlook of the full-year results in accordance with IFRS and core, along with related commentary prior to the release of the quarterly results.

On an annual basis, in the fourth quarter of the year, the Board receives and approves the operating and financial targets for the following year.

In the middle of the year, the Board also reviews and approves the strategic plan for the next five years which includes a projected consolidated income statement in $ prepared in accordance with IFRS and core (as defined by Novartis).

The Board does not have direct access to the Company's financial and management reporting systems but can at any time request more detailed financial information on any aspect that is presented to it.

Internal Audit

The Internal Audit function carries out operational and system audits in accordance with an audit plan approved by the Audit and Compliance Committee. The function helps organizational units accomplish objectives by providing an independent approach to the evaluation, improvement and effectiveness of their internal control framework. It prepares reports on the audits it has performed and reports actual or suspected irregularities to the Audit and Compliance Committee and the CEO. The Audit and Compliance Committee regularly reviews the scope of Internal Audit, audit plans and internal audit results.

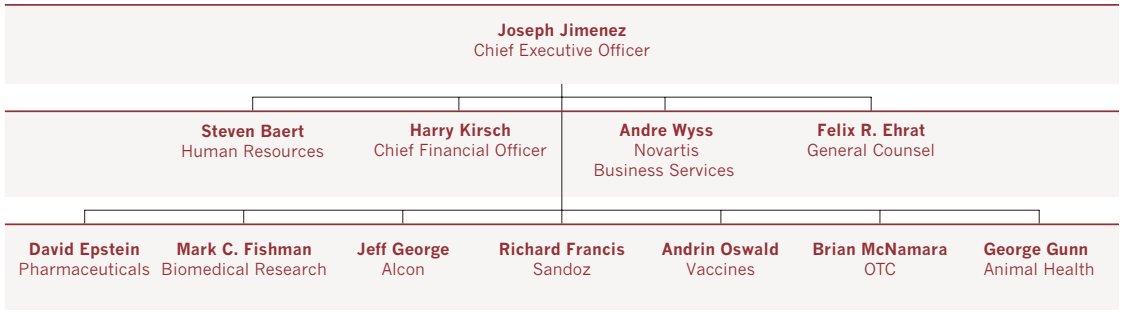
Risk Management

The Corporate Risk Management function is overseen by the Board's independent Risk Committee. The Compensation Committee works closely with the Risk Committee to ensure that the compensation system does not lead to excessive risk-taking by management (for details see our Compensation Report).

Organizational and process measures have been established to identify and mitigate risks at an early stage. Organizationally, the individual divisions are responsible for risk and risk mitigation, with specialized corporate functions—such as Group Finance, Group Quality Assurance, Corporate Health, Safety and Environment, Business Continuity Management, and Integrity & Compliance—providing support and controlling the effectiveness of risk management by the divisions in these respective areas.

OUR MANAGEMENT

COMPOSITION OF THE EXECUTIVE COMMITTEE



Composition of the Executive Committee

The Executive Committee is headed by the CEO. Its members are appointed by the Board.

The organizational structure and responsibilities of the Executive Committee are described in the Board Regulations (www.novartis.com/corporate-governance).

There are no contracts between Novartis and third parties whereby Novartis would delegate any business management tasks to such third parties.

Role and Functioning of the Executive Committee

The Board has delegated to the Executive Committee the overall responsibility for and oversight over the operational management of Novartis. This includes:

- Developing policies and strategic plans for Board approval, and implementing those approved
- Submitting to the Board and its committees proposed changes in management positions of material significance; investments; financial measures; acquisitions or divestments; contracts of material significance; and targets
- Preparing and submitting quarterly and annual reports to the Board and its committees
- Informing the Board of all matters of fundamental significance to the businesses
- Recruiting, appointing and promoting senior management
- Ensuring the efficient operation of the Group and achievement of optimal results
- Promoting an active internal and external communications policy
- Dealing with any other matters delegated by the Board

The Executive Committee is supported by three sub-committees: The Deal Committee (attended by the CEO, CFO, Group General Counsel, Head Research, and Head of M&A and Licensing) reviews important acquisitions and divestments of companies and businesses and business development deals and

makes recommendations to the Executive Committee. The Disclosure Committee (attended by the CEO, CFO, Group General Counsel, Global Head of Investor Relations, and Group Head of Communications) determines whether an event constitutes information that is material to the Group, determines the appropriate disclosure and update of such information and reviews media releases concerning such information. The Disclosure Review Committee supports the CEO and CFO to meet their US Sarbanes-Oxley Act legal requirements. For details please see the description under ''—Our Board of Directors—Information and Control Systems of the Board Vis-à-vis Management—Board Committees.

The CEO

In addition to other Board-assigned duties, the CEO leads the Executive Committee, building and maintaining an effective executive team. With the Executive Committee, the CEO:

- Is responsible for the operational management of Novartis
- Develops strategy proposals to recommend to the Board and ensures that agreed strategies are implemented
- Plans human resourcing to ensure that Novartis has the capabilities and means to achieve its plans
- Develops an organizational structure and establishes processes and systems to ensure the efficient organization of resources
- Ensures that financial results, business strategies and, when appropriate, targets and milestones are communicated to the investment community—and generally develops and promotes an effective communication with shareholders and other stakeholders
- Ensures that business performance is consistent with business principles, as well as legal and ethical standards
- Ensures that robust management succession and management development plans are in place and presented to the Board
- Develops processes and structures to ensure that capital investment proposals are reviewed thoroughly, that associated risks are identified, and that appropriate steps are taken to manage these risks
- Develops and maintains an effective framework of internal controls over risk in relation to all business activities including the Company's trading activities
- Ensures that the flow of information to the Board is accurate, timely and clear

OUR INDEPENDENT EXTERNAL AUDITORS

Duration of the Mandate and Terms of Office of the Auditors

Based on a recommendation by the Audit and Compliance Committee, the Board nominates an independent auditor for election at the Annual General Meeting. PricewaterhouseCoopers (''PwC'') assumed its existing auditing mandate for Novartis in 1996. Bruno Rossi, auditor in charge, began serving in his role in 2013, and Stephen Johnson, global relationship partner, began serving in his role in 2014. The Audit and Compliance Committee ensures that these partners are rotated at least every five years.

Information to the Board and the Audit and Compliance Committee

PwC is responsible for providing an opinion on whether the audited consolidated financial statements comply with International Financial Reporting Standards (IFRS) and Swiss law and whether the separate parent company financial statements of Novartis AG comply with Swiss law. Additionally, PwC is

responsible for opining on the effectiveness of internal control over financial reporting and on the Compensation Report.

The Audit and Compliance Committee, acting on behalf of the Board, is responsible for overseeing the activities of PwC. During 2014, the Audit and Compliance Committee held seven meetings. PwC was invited to attend during the discussion of agenda items that dealt with accounting, financial reporting or auditing matters, and any other matters relevant to their audit.

On an annual basis, PwC provides the Audit and Compliance Committee with written disclosures required by the US Public Company Accounting Oversight Board (PCAOB), and the Audit and Compliance Committee and PwC discuss PwC's independence from Novartis and its management.

The Audit and Compliance Committee recommended to the Board of Directors to approve the audited financial statements for the year ended December 31, 2014. The Board of Directors proposed the acceptance of the financial statements for approval by the Annual General Meeting.

The Audit and Compliance Committee regularly evaluates the performance of PwC and once a year determines whether PwC should be proposed to the Annual General Meeting for election. Also once a year, the auditor in charge and the global relationship partner report to the Board on PwC's activities during the current year and on the audit plan for the coming year. They also answer any questions or concerns Board members might have on the performance of PwC, or on the work it has conducted or is planning to conduct.

To assess the performance of PwC, the Audit and Compliance Committee holds private meetings with the CEO, the CFO and the Global Head of Internal Audit and, if necessary, obtains an independent external assessment. Criteria applied for the performance assessment of PwC include an evaluation of its technical and operational competence; its independence and objectivity; the sufficiency of the resources it has employed; its focus on areas of significant risk to Novartis; its willingness to probe and challenge; its ability to provide effective, practical recommendations; and the openness and effectiveness of its communications and coordination with the Audit and Compliance Committee, the Internal Audit function, and management.

Pre-Approval of Audit and Non-Audit Services

The Audit and Compliance Committee's pre-approval is required for all services provided by PwC. These services may include audit services, audit-related services, tax services and other services.

Pre-approval specifies the particular services or categories of services, and is subject to a specific budget. PwC reports quarterly to the Audit and Compliance Committee regarding the extent of services provided in accordance with this pre-approval and the fees for the services performed to date. The Audit and Compliance Committee may also pre-approve additional services on a case-by-case basis. Tax and Other Services are individually approved prior to commencement of the work.

Audit and Additional Fees

PwC charged the following fees for professional services rendered for the 12-month periods ended December 31, 2014 and December 31, 2013:

	2014	2013
	$ m	$ m
Audit Services	29.7	28.6
Audit-Related Services	2.0	2.0
Tax Services	0.2	0.1
Other Services	0.1	0.3
Total	**32.0**	**31.0**

Audit Services include work performed to issue opinions on the parent company financial statements and the Group consolidated financial statements, to issue opinions relating to the effectiveness of the Group's internal control over financial reporting, and to issue reports on local statutory financial statements. Also included are audit services that generally can only be provided by the statutory auditor, such as the audit of the compensation report, audits of non-recurring transactions, audit of the adoption of new accounting policies, audits of information systems and the related control environment, reviews of quarterly financial results, consents and comfort letters.

Audit-Related Services include those other assurance services provided by the independent auditor but not restricted to those that can only be provided by the statutory auditor. They include services such as audits of pension and other employee benefit plans, contract audits of third-party arrangements, corporate responsibility assurance, compliance with corporate integrity agreements and other audit-related services.

Tax Services represent tax compliance, assistance with historical tax matters and other tax-related services.

Other Services include training in the finance area, benchmarking studies, and license fees for use of accounting and other reporting guidance databases.

OUR CORPORATE GOVERNANCE FRAMEWORK

Laws and Regulations

Novartis is subject to the laws of Switzerland, in particular Swiss company and securities laws, and to the securities laws of the United States as applicable to foreign private issuers of securities.

In addition, Novartis is subject to the rules of the SIX Swiss Exchange, including the Directive on Information Relating to Corporate Governance.

Novartis is also subject to the rules of the New York Stock Exchange (NYSE) as applicable to foreign private issuers of securities. The NYSE requires Novartis to describe any material ways in which its corporate governance differs from those of domestic US companies listed on the exchange. These differences are:

- Shareholders of Novartis do not receive written reports from Board committees.
- External auditors are appointed by the shareholders at the Annual General Meeting, as opposed to being appointed by the Audit and Compliance Committee.
- While the shareholders cannot vote on all equity-compensation plans, they are entitled to hold a consultative vote on the compensation system of Novartis. The vote takes place before every significant change to the compensation system, but at least at every third Annual General Meeting.

As from 2015 there will be yearly binding shareholder votes on the compensation of the Board and of the Executive Committee.

– The Board has set up a separate Risk Committee that is responsible for business risk oversight, as opposed to delegating this responsibility to the Audit and Compliance Committee.

– The full Board is responsible for overseeing the performance evaluation of the Board and Executive Committee.

– The full Board is responsible for setting objectives relevant to the compensation of the CEO and for evaluating the performance of the CEO.

Swiss Code of Best Practice for Corporate Governance

Novartis applies the Swiss Code of Best Practice for Corporate Governance.

Novartis Corporate Governance Standards

Novartis has incorporated the corporate governance standards described above into the Articles of Incorporation and the Regulations of the Board of Directors, its Committees and the Executive Committee (www.novartis.com/corporate-governance).

The Governance, Nomination and Corporate Responsibilities Committee regularly reviews these standards and principles, taking into account best practices, and recommends improvements to the corporate governance framework for consideration by the full Board.

Additional corporate governance information can be found on the Novartis website:

http://www.novartis.com/corporate-governance.

Printed copies of the Novartis Articles of Incorporation, Regulations of the Board and Charters of Board Committees can be obtained by writing to: Novartis AG, Attn: Corporate Secretary, Lichtstrasse 35, CH-4056 Basel, Switzerland.

FURTHER INFORMATION

The Group Structure of Novartis

Novartis AG and Group Companies

Under Swiss company law, Novartis AG is organized as a corporation that has issued shares of common stock to investors. The registered office of Novartis AG is Lichtstrasse 35, CH-4056 Basel, Switzerland.

Business operations are conducted through Novartis Group companies. Novartis AG, a holding company, owns or controls directly or indirectly all entities worldwide belonging to the Novartis Group. Except as described below, the shares of these companies are not publicly traded. The principal Novartis subsidiaries and associated companies are listed in Note 32 to the Group's consolidated financial statements.

Divisions

The businesses of Novartis are divided on a worldwide basis into six operating divisions: Pharmaceuticals, Alcon (eye care), Vaccines, Sandoz (generics), Over-the-Counter (OTC) and Animal Health. In addition there are Novartis Business Services (shared services organization, delivering services to the divisions), Novartis Institutes for BioMedical Research (Novartis' global pharmaceutical research organization), and Corporate activities. Subject to closings during 2015, Vaccines will be divested, and

OTC will be brought into a joint venture with GlaxoSmithKline's business in this area with Novartis holding a 36.5% minority stake in this joint venture. Animal Health was divested on January 1, 2015.

Majority Holdings in Publicly Traded Group Companies

The Novartis Group owns 75% of Novartis India Limited, with its registered office in Mumbai, India, and listed on the Bombay Stock Exchange (ISIN INE234A01025, ID: NOVARTIS). The total market value of the 25% free float of Novartis India Limited was $82.8 million at December 31, 2014, using the quoted market share price at year-end. Applying this share price to all the shares of the company, the market capitalization of the whole company was $331.2 million and that of the shares owned by Novartis was $248.4 million.

Significant Minority Shareholding owned by the Novartis Group

The Novartis Group owns 33.3% of the bearer shares of Roche Holding AG, with its registered office in Basel, Switzerland, and listed on the SIX Swiss Exchange (Valor No. 1203211, ISIN CH0012032113, symbol: RO). The market value of the Group's interest in Roche Holding AG, as of December 31, 2014, was $14.4 billion. The total market value of Roche Holding AG was $234.9 billion. Novartis does not exercise control over Roche Holding AG, which is independently governed, managed and operated.

Political Contributions

Novartis makes political contributions to support political dialogue on public policy issues of relevance to Novartis, such as healthcare innovation or access to medicine.

Political contributions made by Novartis are not intended to give rise to any obligations of the party receiving it. Moreover, rules and procedures are in place to make sure that political contributions are never made with the expectation of a direct or immediate return for Novartis, and that they are fully compliant with applicable laws, regulations and industry codes.

Novartis only makes political contributions in countries where such contributions by corporations are legal and generally considered appropriate.

In 2014, Novartis made political contributions totaling approximately $766,000, thereof approximately $500,000 in Switzerland, $240,000 in the US, and $26,000 in Canada. In addition, in the US, a Political Action Committee (PAC) established by Novartis used funds received from Novartis employees (but not from the Company) to make political contributions totaling approximately $300,000.

In Switzerland, Novartis supports political parties that have a political agenda and hold positions that support the strategic interests of Novartis, its shareholders and other stakeholders.

Relations with Shareholders

The CEO, with the CFO and the Investor Relations team, supported by the Chairman, is responsible for ensuring effective communication with shareholders to keep them informed of the company's strategy, business operations and governance. Through communication, the Board also learns about and addresses shareholders' expectations and concerns.

Novartis communicates with its shareholders through the Annual General Meeting, meetings with groups of shareholders and individual shareholders, and written and electronic communication.

At the Annual General Meeting, the Chairman, the CEO and other Executive Committee members, and representatives of the external auditors are present and can answer shareholders' questions. Other meetings with shareholders may be attended by the Chairman, CEO, CFO, Executive Committee members, and other members of senior management.

Topics discussed with shareholders may include strategy, business performance and corporate governance.

Information for Our Stakeholders

Introduction

Novartis is committed to open and transparent communication with shareholders, financial analysts, customers, suppliers and other stakeholders. Novartis aims to disseminate material developments in its businesses in a broad and timely manner that complies with the rules of the SIX Swiss Exchange and NYSE.

Communications

Novartis publishes an Annual Report each year that provides information on the Group's results and operations. In addition to the Annual Report, Novartis prepares an annual report on Form 20-F that is filed with the US Securities and Exchange Commission (SEC). Novartis discloses quarterly financial results in accordance with IFRS and issues press releases from time to time regarding business developments.

Novartis furnishes press releases relating to financial results and material events to the SEC via Form 6-K. An archive containing recent Annual Reports, annual reports on Form 20-F, and quarterly results releases—as well as related materials such as slide presentations and conference call webcasts—is on the Novartis website at http://www.novartis.com/investors.

Novartis publishes a consolidated Corporate Responsibility Performance Report, which details progress and demonstrates the company's commitment to be a leader in corporate responsibility. The Corporate Responsibility Performance Report reflects the best-in-class reporting standard, the Global Reporting Initiative's (GRI) G4 guidelines, and fulfills the Company's reporting requirement as a signatory to the UN Global Compact.

Information contained in reports and releases issued by Novartis are only correct and accurate at the time of release. Novartis does not update past releases to reflect subsequent events and advises against relying on them for current information.

Investor Relations Program

An Investor Relations team manages the Group's interaction with the international financial community. Several events are held each year to provide institutional investors and analysts with various opportunities to learn more about Novartis.

Investor Relations is based at the Group's headquarters in Basel. Part of the team is located in the US to coordinate interaction with US investors. Information is available on the Novartis website: www.novartis.com/investors. Investors are also welcome to subscribe to a free e-mail service on this site.

Website Information

Topic	Information
Share Capital	Articles of Incorporation of Novartis AG http://www.novartis.com/corporate-governance Novartis key share data http://www.novartis.com/key-share-data
Shareholder Rights	Articles of Incorporation of Novartis AG http://www.novartis.com/corporate-governance Investor Relations information http://www.novartis.com/investors
Board Regulations	Board Regulations http://www.novartis.com/corporate-governance
Executive Committee	Executive Committee http://www.novartis.com/executive-committee
Novartis Code for Senior Financial Officers	Novartis Code of Ethical Conduct for CEO and Senior Financial Officers http://www.novartis.com/corporate-governance
Additional Information	Novartis Investor Relations http://www.novartis.com/investors

6.D Employees

The table below sets forth the breakdown of the total year-end number of our full time equivalent employees by main category of activity and geographic area for the past three years.

For the year ended December 31, 2014 (full time equivalents)	Research & Development	Production & Supply	Marketing & Sales	General & Administration	Total
USA	8,147	8,283	6,529	2,341	25,300
Canada and Latin America	515	2,435	5,309	1,327	9,586
Europe	11,052	23,997	20,884	7,134	63,067
Asia/Africa/Australasia	3,693	7,739	21,454	2,574	35,460
Total	**23,407**	**42,454**	**54,176**	**13,376**	**133,413**

For the year ended December 31, 2013 (full time equivalents)	Research & Development	Production & Supply	Marketing & Sales	General & Administration	Total
USA	8,255	8,600	7,253	2,963	27,071
Canada and Latin America	570	2,943	5,611	1,325	10,449
Europe	11,438	23,449	20,719	7,009	62,615
Asia/Africa/Australasia	3,674	7,331	21,986	2,570	35,561
Total	**23,937**	**42,323**	**55,569**	**13,867**	**135,696**

For the year ended December 31, 2012 (full time equivalents)	Research & Development	Production & Supply	Marketing & Sales	General & Administration	Total
USA	8,056	8,693	7,073	2,882	26,704
Canada and Latin America	554	2,875	5,626	1,254	10,309
Europe	10,994	22,405	19,421	6,608	59,428
Asia/Africa/Australasia	3,569	5,613	19,855	2,246	31,283
Total	**23,173**	**39,586**	**51,975**	**12,990**	**127,724**

A significant number of our associates are represented by unions or works councils. We have not experienced any material work stoppages in recent years, and we consider our employee relations to be good.

6.E Share Ownership

The aggregate amount of our shares owned by our non-executive Directors and the members of our Executive Committee in 2014 (including persons closely linked to them) as of December 31, 2014 was 2,212,052 shares. This excludes certain unvested shares and other equity rights (such as Restricted Stock Units and Phantom Shares) because such unvested shares and equity rights do not represent shares held by these persons as of December 31, 2014. In prior years, we reported this number including unvested shares and other equity rights and excluding shares held by non-executive Directors and members of our Executive Committee who had departed during the course of that year. Had the current approach been applied last year, the aggregate amount of shares owned reported as of December 31, 2013 would have been 5,756,587.

The aggregate amount of Novartis share and ADR options, including other information regarding the options, held by our non-executive Directors and the members of our Executive Committee in 2014, as of December 31, 2014 is set forth below:

Title of Options	Amount of shares called for by the options	Exercise Price[1]	Purchase Price (if any)	Expiration Date	Total number of options held
Novas14 Options	1	57.45	0	February 3, 2014	0
Novas15 Options	1	57.45	0	February 3, 2015	0
Novas16 Options	1	71.30	0	February 5, 2016	47,620
Novas17 Options	1	72.85	0	February 3, 2017	55,130
Novas18 Options	1	64.05	0	January 10, 2018	266,282
Novas19 Options	1	53.65	0	January 18, 2019	0
Novas20 Options	1	55.85	0	January 19, 2020	0
Novas21 Options	1	54.70	0	January 19, 2021	141,396
Novas22 Options	1	54.20	0	January 19, 2022	330,687
Novas23 Options	1	61.70	0	January 17, 2023	378,390
Total Novartis Share Options					**1,219,505**
Novartis ADR Options Cycle VIII	1	$46.09	0	February 4, 2014	0
Novartis ADR Options Cycle IX	1	$47.84	0	February 4, 2015	0
Novartis ADR Options Cycle X	1	$54.70	0	February 5, 2016	0
Novartis ADR Options Cycle XI	1	$58.38	0	February 3, 2017	0
Novartis ADR Options Cycle XII	1	$57.96	0	January 10, 2018	0
Novartis ADR Options Cycle XIII	1	$46.42	0	January 18, 2019	0
Novartis ADR Options Cycle XIV	1	$53.70	0	January 19, 2020	0
Novartis ADR Options Cycle XV	1	$57.07	0	January 19, 2021	0
Novartis ADR Options Cycle XVI	1	$58.33	0	January 19, 2022	0
Novartis ADR Options Cycle XVI	1	$66.07	0	January 17, 2023	0
Total Novartis ADR Options					**0**

[1] Exercise price indicated is per share, and denominated in Swiss francs for share options and US dollars for ADR options.

Information above for any former non-executive Directors and members of our Executive Committee is reported as of the date of their resignation. In addition, as of April 30, 2014, one former Executive Committee member, Kevin Buehler, owned 605,877 other options, consisting of non-tradable options and share settled appreciation rights, resulting from the conversion of Alcon equity into Novartis equity.

For more information on the Novartis shares, share options and other equity-based instruments owned by individual members of our Executive Committee and by our current non-executive Directors, see "—Item 6.B Compensation—Ownership of Novartis Shares and Share Option by Executive Committee Members." and "—Item 6.B Compensation—Ownership of Novartis Shares and Share Option by Non-Executive Directors." For information on our equity-based compensation plans see "—Item 6.B Compensation—Compensation to Novartis Associates."

Item 7. Major Shareholders and Related Party Transactions

7.A Major Shareholders

Novartis shares are widely held. As of December 31, 2014, Novartis had approximately 150,000 shareholders listed in its share register, representing 70% of issued shares. Based on the Novartis AG share register and excluding treasury shares, approximately 41% of the shares registered by name were held in Switzerland and 47% were held in the US. Approximately 12% of the shares registered in the

share register were held by individual investors, while 88% were held by legal entities, nominees, fiduciaries and the ADS depositary.

Based on our share register, we believe that we are not directly or indirectly owned or controlled by another corporation or government, or by any other natural or legal persons. There are no arrangements that may result in a change of control.

2014

According to the share register, on December 31, 2014, no person or entity was registered as the owner of more than 5% of our shares. As of that date, excluding 5.7% of our share capital held by Novartis AG, together with Novartis affiliates (excluding foundations), as treasury shares, the following registered shareholders (including nominees and the ADS depositary) held more than 2% of the total share capital of Novartis with the right to vote these shares:

- Shareholders: Novartis Foundation for Employee Participation, with its registered office in Basel, Switzerland, holding 3.2%; and Emasan AG, with its registered office in Basel, Switzerland, holding 3.3%;
- Nominees: JPMorgan Chase Bank, New York, NY (holding 9.1%); Nortrust Nominees, London, England (holding 3.2%); and The Bank of New York Mellon, New York, NY (holding 4.6%) through its nominees, Mellon Bank, Everett, MA (holding 2.6%) and The Bank of New York Mellon, Brussels, Belgium (2.0%); and
- ADS depositary: JPMorgan Chase Bank, New York, NY (holding 11.4%).

According to disclosure notifications filed with Novartis AG and the SIX Swiss Exchange, each of the following shareholders held between 3% and 5% of the share capital of Novartis AG as of December 31, 2014:

- Capital Group Companies, Inc., Los Angeles, CA; and
- BlackRock, Inc., New York, NY

As of December 31, 2014, no other shareholder was registered as owner of more than 2% of the registered share capital. Novartis has not entered into any agreement with any shareholder regarding the voting or holding of Novartis shares.

2013

According to the share register, on December 31, 2013, no person or entity was registered as the owner of more than 5% of our shares. As of that date, excluding 4.9% of our share capital held by Novartis AG, together with Novartis affiliates (excluding foundations), as treasury shares, the following registered shareholders (including nominees and the ADS depositary) held more than 2% of the total share capital of Novartis with the right to vote these shares:

- Shareholders: Novartis Foundation for Employee Participation, with its registered office in Basel, Switzerland, holding 3.0%; and Emasan AG, with its registered office in Basel, Switzerland, holding 3.3%;
- Nominees: JPMorgan Chase Bank, New York, NY (holding 11.1%); Nortrust Nominees, London, England (holding 3.2%); and The Bank of New York Mellon, New York, NY (holding 4.6%) through its nominees, Mellon Bank, Everett, MA (holding 2.8%) and The Bank of New York Mellon, Brussels, Belgium (1.8%); and
- ADS depositary: JPMorgan Chase Bank, New York, NY (holding 11.7%).

According to a disclosure notification filed with Novartis AG, Norges Bank (Central Bank of Norway), Oslo, Norway, held 2.03% of the share capital of Novartis AG as of December 31, 2013.

According to disclosure notifications filed with Novartis AG and the SIX Swiss Exchange, each of the following shareholders held between 3% and 5% of the share capital of Novartis AG as of December 31, 2013:

- Capital Group Companies, Inc., Los Angeles, CA; and
- BlackRock, Inc., New York, NY

As of December 31, 2013, no other shareholder was registered as owner of more than 2% of the registered share capital. Novartis has not entered into any agreement with any shareholder regarding the voting or holding of Novartis shares.

2012

According to the share register, on December 31, 2012, no person or entity was registered as the owner of more than 5% of our shares. As of that date, excluding 4.09% of our share capital held by Novartis AG, together with Novartis affiliates, as treasury shares, the following registered shareholders (including nominees and the ADS depositary) held more than 2% of the total share capital of Novartis with the right to vote these shares:

- Shareholders: Novartis Foundation for Employee Participation, with its registered office in Basel, Switzerland, holding 4.0%; and Emasan AG, with its registered office in Basel, Switzerland, holding 3.3%;
- Nominees: JPMorgan Chase Bank, New York, NY (holding 11.4%); Nortrust Nominees, London, England (holding 3.3%); and The Bank of New York Mellon, New York, NY (holding 5.0%) through its nominees, Mellon Bank, Everett, MA (holding 3.3%) and The Bank of New York Mellon, Brussels, Belgium (1.7%); and
- ADS depositary: JPMorgan Chase Bank, New York, NY (holding 11.7%).

According to a disclosure notification filed with Novartis AG, Norges Bank (Central Bank of Norway), Oslo, Norway, held 2.3% of the share capital of Novartis AG as of December 31, 2012.

According to disclosure notifications filed with Novartis AG and the SIX Swiss Exchange, each of the following shareholders held between 3% and 5% of the share capital of Novartis AG as of December 31, 2012:

- Capital Group Companies, Inc., Los Angeles, CA; and
- BlackRock, Inc., New York, NY

As of December 31, 2012, no other shareholder was registered as owner of more than 2% of the registered share capital. Novartis has not entered into any agreement with any shareholder regarding the voting or holding of Novartis shares.

7.B Related Party Transactions

See "Item 18. Financial Statements—Note 27".

7.C Interests of Experts and Counsel

Not applicable.

Item 8. Financial Information

8.A Consolidated Statements and Other Financial Information

See "Item 18. Financial Statements."

Dividend policy

Subject to the dividend policy described below, our Board of Directors expects to recommend the payment of a dividend in respect of each financial year. If approved by our shareholders at the relevant annual Shareholders' Meeting, the dividends will be payable shortly following such approval. Any shareholder who purchases our shares before the ex-dividend date and holds the shares until that date shall be deemed to be entitled to receive the dividends approved at that meeting. Dividends are reflected in our financial statements in the year in which they are approved by our shareholders.

Our dividend policy is to pay a growing annual dividend. This policy is subject to our financial conditions and outlook at the time, the results of our operations and other factors.

The Board will propose a dividend of CHF 2.60 per share to the shareholders for approval at the Annual General Meeting to be held on February 27, 2015. Because we pay dividends in Swiss francs, exchange rate fluctuations will affect the US dollar amounts received by holders of ADRs. For a summary of dividends we paid in the past five years, see "Item 3. Key Information—3.A Selected Financial Data—Cash Dividends per Share." See also "Item 3. Key Information—3.D Risk Factors—The price of our ADRs and the US dollar value of any dividends may be negatively affected by fluctuations in the US dollar/Swiss franc exchange rate."

Disclosure pursuant to Section 219 of the Iran Threat Reduction & Syria Human Rights Act (ITRA)

At Novartis, it is our mission to discover, develop and successfully market innovative products to prevent and cure diseases, to ease suffering and to enhance the quality of life of all people, regardless of where they live. As part of that mission, and in connection with the sale of medicines and other healthcare products in Iran, we have representative offices located in Iran.

As of October 18, 2010, a non-US affiliate within our Pharmaceuticals Division entered into a non-binding Memorandum of Understanding (MoU) with the Ministry of Health and Medical Education of the Islamic Republic of Iran. Pursuant to the MoU, the Iranian Ministry of Health acknowledges certain benefits that may apply to sales of certain Novartis Pharmaceuticals medicines by third-party distributors in Iran. These include fast-track registration, market exclusivity, end-user subsidies and exemptions from customs tariffs. Novartis receives no payments from the Iranian Ministry of Health under the MoU and the MoU creates no obligations on the part of either Novartis or the Iranian Ministry of Health.

In 2014, Novartis made payments to government entities in Iran for exit fees and other transactions ordinarily incident to travel by doctors and other medical professionals resident in Iran to attend conferences or other events outside Iran.

From time to time, including in 2014, our non-US affiliates enter into agreements with hospitals and research institutes in Iran to provide grants, sponsor congresses and seminars, and with doctors and other healthcare professionals for consulting services, including participation in advisory boards. Some of these hospitals and research institutes are owned or controlled by the government of Iran, and some of these doctors and healthcare professionals are employed by hospitals that may be public or government-owned.

Because we have operations in Iran, including employees, Novartis obtains services and has other dealings incidental to its activities in that country, including paying taxes and salaries, and obtaining

rentals, electricity, water and telecommunications services, office and similar supplies and customs-related services from Iranian companies who may be owned or controlled by the government of Iran.

Some beneficiaries of payments made by our non-US affiliates in the course of the operations described above maintain accounts at banks that are included on the list of Specially Designated Nationals (SDNs).

8.B Significant Changes

None.

Item 9. The Offer and Listing

9.A Offer and Listing Details

Our shares are listed in Switzerland on the SIX Swiss Exchange (SIX).

American Depositary Shares (ADSs), each representing one share, have been available in the US through an American Depositary Receipts (ADR) program since December 1996. This program was established pursuant to a Deposit Agreement which we entered into with JPMorgan Chase Bank N.A. as Depositary (Deposit Agreement). Our ADRs have been listed on the NYSE since May 2000, and are traded under the symbol "NVS."

The table below sets forth, for the periods indicated, the high and low closing sales prices for our shares traded in Switzerland and for ADRs traded in US. The data below regarding our shares reflects price and volume information for trades completed by members of the SIX during the day as well as for inter- dealer trades completed off the SIX and certain inter-dealer trades completed during trading on the previous business day.

The following share data was taken from SIX; the ADR data was taken from Bloomberg:

	Shares		ADRs	
	High CHF per share	Low CHF per share	High $ per ADR	Low $ per ADR
Annual information for the past five years				
2010	60.25	50.55	59.77	43.78
2011	55.80	39.99	64.52	51.65
2012	59.00	48.80	63.96	51.48
2013	73.65	58.70	80.39	63.70
2014	93.80	70.65	96.65	78.20
Quarterly information for the past two years				
2014				
First Quarter	75.30	70.65	85.02	78.20
Second Quarter	81.40	72.90	90.98	82.51
Third Quarter	90.15	76.95	94.80	85.25
Fourth Quarter	93.80	80.00	96.65	85.02
2013				
First Quarter	67.45	58.70	71.32	63.70
Second Quarter	73.65	63.25	75.50	68.42
Third Quarter	71.20	66.20	77.08	70.66
Fourth Quarter	72.75	66.60	80.39	72.96
Monthly information for most recent six months				
August 2014	82.35	76.95	90.00	85.25
September 2014	90.15	85.80	94.80	92.96
October 2014	89.80	80.00	93.22	85.02
November 2014	93.50	87.85	96.65	91.70
December 2014	93.80	88.65	96.39	91.64
January 2015 (through January 21)	98.90	84.75	101.48	91.67

Fluctuations in the exchange rate between the Swiss franc and the US dollar will affect any comparisons of Swiss share prices and US ADR prices.

The average daily volumes traded on the SIX (ON/OFF exchange) for the years 2014, 2013 and 2012 were 4,963,517, 4,568,858, and 4,637,552, respectively. These numbers are based on total annual turnover statistics supplied by the SIX via the Swiss Market Feed, which supplies such data to subscribers and to other information providers. The average daily volumes traded in the US for the years 2014, 2013 and 2012 were 1,504,087, 1,440,718, and 2,187,889, respectively.

The Depositary has informed us that as of January 21, 2015, there were 308,043,896 ADRs outstanding, each representing one Novartis share (approximately 11% of total Novartis shares issued). On January 21, 2015, the closing sales price per share on the SIX was CHF 84.75 and $98.75 per ADR on the NYSE.

9.B Plan of Distribution

Not applicable.

9.C Markets

See "9.A Offer and Listing Details."

9.D Selling Shareholders

Not applicable.

9.E Dilution

Not applicable.

9.F Expenses of the Issue

Not applicable.

Item 10. Additional Information

10.A Share capital

Not applicable.

10.B Memorandum and Articles of Association

The following is a summary of certain provisions of our Articles of Incorporation (Articles), our Regulations of the Board of Directors (Board Regulations) and of Swiss law, particularly, the Swiss Code of Obligations (Swiss CO). This is not a summary of all the significant provisions of the Articles, the Board Regulations or of Swiss law. This summary is qualified in its entirety by reference to the Articles and the Board Regulations, which are an exhibit to this Form 20-F, and to Swiss law.

At our 2015 Annual General Meeting to be held on February 27, 2015, our Board of Directors will ask our shareholders to approve amendments to our Articles of Incorporation to align with Swiss rules implementing the Minder Initiative. Key aspects of these amendments will include determining (i) the maximum number of allowable external mandates for members of our Board and Executive Committee, (ii) the principles concerning the tasks and responsibilities of our Compensation Committee, (iii) the details concerning the procedure for the new yearly binding separate shareholder votes on the aggregate compensation of our Board and Executive Committee, and (iv) the principles of our compensation policy.

10.B.1 *Company Purpose*

Novartis AG is registered in the commercial register of the Canton of Basel-Stadt, Switzerland, under number CH-270.3.002.061-2. Our business purpose, as stated in Article 2 of the Articles, is to hold interests in enterprises in the area of healthcare or nutrition. We may also hold interests in enterprises in the areas of biology, chemistry, physics, information technology or related areas. We may acquire, mortgage, liquidate or sell real estate and intellectual property rights in Switzerland or abroad. In pursuing our business purpose, we strive to create sustainable value.

10.B.2 *Directors*

(a) According to our Board Regulations, our Directors may not participate in deliberations or resolutions on matters which affect, or reasonably might affect, the Director's interests, or the interests of

a person close to the Director. In addition, the Swiss CO sets forth that if, in connection with the conclusion of a contract, the Company is represented by the person with whom it is concluding the contract, such contract shall be in writing. Furthermore, the Swiss CO does require directors and members of senior management to safeguard the interests of the corporation and, in this connection, imposes a duty of care and a duty of loyalty on such persons. This rule is generally interpreted to mean that directors and members of senior management are disqualified from participating in decisions which affect them personally.

(b) As with any Board resolution, Directors may not vote on their own compensation unless at least a majority of the Directors are present.

(c) The Articles and the Board Regulations contain no specific provision permitting or prohibiting Directors from borrowing from us. The Board of Directors may take decisions on all matters which by law or the Articles are not allocated to the General Meeting of Shareholders.

(d) Directors must retire after the end of their seventieth year of age, but the retirement does not become effective until the date of the next Ordinary General Meeting of Shareholders. The General Meeting of Shareholders may, under special circumstances, grant an exemption from this rule and may elect a Director for further terms of office of no more than three years at a time.

(e) Under the Articles, each of our Directors must also be a shareholder. Ownership of one share is sufficient to satisfy this requirement.

10.B.3 ***Shareholder Rights***

Because we have only one class of registered shares, the following information applies to all shareholders.

(a) The Swiss CO requires that at least 5% of our annual profit be retained as general reserves, so long as these reserves amount to less than 20% of our registered share capital. The law and the Articles permit us to accrue additional reserves.

Under the Swiss CO, we may only pay dividends out of the balance sheet profit, out of reserves created for this purpose or out of free reserves. In either event, under the Swiss CO, while the Board of Directors may propose that a dividend be paid, we may only pay dividends upon shareholders' approval at a General Meeting of Shareholders. Our auditors must confirm that the dividend proposal of our Board of Directors conforms with the Swiss CO and the Articles. Our Board of Directors intends to propose a dividend once each year. See "Item 3. Key Information—3.A. Selected Financial Data—Cash Dividends per Share" and "Item 8. Financial Information—8.A. Consolidated Financial Statements and Other Financial Information—Dividend Policy."

Dividends are usually due and payable shortly after the shareholders have passed a resolution approving the payment. Dividends which have not been claimed within five years after the due date revert to us, and are allocated to our general reserves. For information about deduction of the withholding tax or other duties from dividend payments, see "Item 10. Additional Information—10.E Taxation."

(b) Each share is entitled to one vote at a General Meeting of Shareholders. Voting rights may only be exercised for shares registered with the right to vote on the Record Date. In order to do so, the shareholder must file a share registration form with us, setting forth the shareholder's name, address and citizenship (or, in the case of a legal entity, its registered office). If the shareholder has not timely filed the form, then the shareholder may not vote at, or participate in, General Meetings of Shareholders.

To vote its shares, the shareholder must also explicitly declare that it has acquired the shares in its own name and for its own account. If the shareholder refuses to make such a declaration, the shares may not be voted unless the Board of Directors recognizes such shareholder as nominee. The Board of

Directors may grant such nominees the right to vote up to 0.5% of the registered share capital as set forth in the commercial register.

Except as described below, no shareholder may be registered with the right to vote shares composing more than 2% of our registered share capital as set forth in the commercial register. If a shareholder holds more than 2% of Novartis' shares, that shareholder will be entitled to register the excess shares, but not to cast votes based upon them (registration without the right to vote).

For purposes of the 2% rule for shareholders and the 0.5% rule for nominees, groups of companies and groups of shareholders acting in concert are considered to be one shareholder. The Board of Directors may, upon request, grant exemptions from both the 2% rule for shareholders and the 0.5% rule for nominees. The Board of Directors may delegate this power. Finally, the shareholders may cancel the registration restrictions upon a resolution carrying a two-thirds majority of the vote at a General Meeting of Shareholders.

After hearing the registered shareholder or nominee, the Board of Directors may cancel, with retroactive effect as of the date of registration, the registration of the shareholders if the registration was effected based on false information.

Shareholders' resolutions generally require the approval of a majority of the votes present at a General Meeting of Shareholders. As a result, abstentions have the effect of votes against the resolution. Shareholder resolutions requiring a vote by such "absolute majority" include (1) amendments to the Articles; (2) elections of directors and statutory auditors; (3) approval of the annual report and the annual accounts; (4) setting the annual dividend; (5) decisions to discharge directors and management from liability for matters disclosed to the General Meeting of Shareholders; and (6) the ordering of an independent investigation into specific matters proposed to the General Meeting of Shareholders.

According to the Articles and Swiss law, the following types of shareholders' resolutions require the approval of a "supermajority" of at least two-thirds of the votes present at a General Meeting of Shareholders: (1) an alteration of our corporate purpose; (2) the creation of shares with increased voting powers; (3) an implementation of restrictions on the transfer of registered shares and the removal of such restrictions; (4) an authorized or conditional increase of the share capital; (5) an increase of the share capital by conversion of equity, by contribution in kind, or for the purpose of an acquisition of property or the grant of special rights; (6) a restriction or an elimination of shareholders' preemptive rights; (7) a change of our domicile; (8) our dissolution; or (9) any amendment to the Articles which would create or eliminate a supermajority requirement. Cumulative voting of shares is not permitted under Swiss law.

Our shareholders annually elect all of the members of the Board of Directors, as well as the Chairman of the Board of Directors, the members of the Compensation Committee and the independent shareholder representative.

At General Meetings of Shareholders, shareholders can be represented by proxy. However, a proxy must either be the shareholder's legal representative, another shareholder with the right to vote, or the independent shareholder representative. Votes are taken either by a show of hands or by electronic voting, unless the General Meeting of Shareholders resolves to have a ballot or where a ballot is ordered by the chairman of the meeting.

American Depositary Shares (ADSs) each representing one Novartis share and evidenced by American Depositary Receipts (ADRs) are issued by our depositary JPMorgan Chase Bank, New York, and not by us. The ADR is vested with rights defined and enumerated in the Deposit Agreement (such as the rights to vote, to receive a dividend and to receive a share of Novartis in exchange for a certain number of ADRs). The enumeration of rights, including any limitations on those rights in the Deposit Agreement, is final. There are no other rights given to the ADR holders. Only the ADS depositary, holding our shares underlying the ADRs, is registered as shareholder in our share register. An ADR is not a Novartis share and an ADR holder is not a Novartis shareholder.

The Deposit Agreement between our depositary, the ADR holder and us has granted certain indirect rights to vote to the ADR holders. ADR holders may not attend Novartis General Meetings in person. ADR holders exercise their voting rights by instructing JPMorgan Chase Bank, our depositary, to exercise the voting rights attached to the registered shares underlying the ADRs. Each ADR represents one Novartis share. JPMorgan Chase Bank exercises the voting rights for registered shares underlying ADRs for which no voting instructions have been given by providing a discretionary proxy to an uninstructed independent designee pursuant to paragraph 13 of the Deposit Agreement governing ADRs. Such designee has to be a shareholder of Novartis. The same voting restrictions apply to ADR holders as to those holding Novartis shares (i.e. the right to vote up to 2% of the Novartis registered share capital—unless otherwise granted an exemption by the Board—and disclosure requirement for nominees).

(c) Shareholders have the right to allocate the profit shown on our balance sheet by vote taken at the General Meeting of Shareholders, subject to the legal requirements described in "Item 10.B.3(a) Shareholder Rights".

(d) Under the Swiss CO, any surplus arising out of a liquidation of our Company (*i.e.*, after the settlement of all claims of all creditors) would be distributed to the shareholders in proportion to the paid-in nominal value of their shares.

(e) The Swiss CO limits a corporation's ability to hold or repurchase its own shares. We and our subsidiaries may only repurchase shares if we have freely disposable equity, in the amount necessary for this purpose, available. The aggregate nominal value of all Novartis shares held by us and our subsidiaries may not exceed 10% of our registered share capital. However, it is accepted that a corporation may repurchase its own shares beyond the statutory limit of 10%, if the repurchased shares are clearly dedicated for cancellation and if the shareholders passed a respective resolution at a General Meeting of Shareholders. In addition, we are required to create a special reserve on our balance sheet in the amount of the purchase price of the acquired shares. Repurchased shares held by us or our subsidiaries do not carry any rights to vote at a General Meeting of Shareholders, but are entitled to the economic benefits generally connected with the shares. It should be noted that the definition of what constitutes subsidiaries, and therefore, treasury shares, for purposes of the above described reserves requirement and voting restrictions differs from the definition included in the consolidated financial statements. The definition in the consolidated financial statements requires consolidation for financial reporting purposes of special purpose entities, irrespective of their legal structure, in instances where we have the power to govern the financial and operating policies of the entity so as to obtain benefits from its activities.

Under the Swiss CO, we may not cancel treasury shares without the approval of a capital reduction by our shareholders.

(f) Not applicable.

(g) Since all of our issued and outstanding shares have been fully paid in, we can make no further capital calls on our shareholders.

(h) See Items "10.B.3(b) Shareholder Rights" and "10.B.7 Change in Control".

10.B.4 ***Changes To Shareholder Rights***

Under the Swiss CO, we may not issue new shares without the prior approval of a capital increase by our shareholders. If a capital increase is approved, then our shareholders would generally have certain preemptive rights to obtain newly issued shares in an amount proportional to the nominal value of the shares they already hold. These preemptive rights could be modified in certain limited circumstances with the approval of a resolution adopted at a General Meeting of Shareholders by a supermajority of votes. In addition, we may not create shares with increased voting powers or place restrictions on the transfer of registered shares without the approval of a resolution adopted at a General Meeting of Shareholders by a

supermajority of votes. In addition, see Item 10.B.3(b) with regard to the Board of Directors' ability to cancel the registration of shares under limited circumstances.

10.B.5 ***Shareholder Meetings***

Under the Swiss CO and the Articles, we must hold an annual ordinary General Meeting of Shareholders within six months after the end of our financial year. General Meetings of Shareholders may be convened by the Board of Directors or, if necessary, by the statutory auditors. The Board of Directors is further required to convene an extraordinary General Meeting of Shareholders if so resolved by a General Meeting of Shareholders, or if so requested by shareholders holding an aggregate of at least 10% of the registered shares, specifying the items for the agenda and their proposals. Shareholders holding shares with a nominal value of at least CHF 1,000,000 (*i.e.*, 2,000,000 Novartis shares) have the right to request that a specific proposal be put on the agenda and voted upon at the next General Meeting of Shareholders. A General Meeting of Shareholders is convened by publishing a notice in the official Swiss Commercial Gazette (*Schweizerisches Handelsamtsblatt*) at least 20 days prior to such meeting. Shareholders may also be informed by mail. There is no provision in the Swiss CO or our Articles requiring a quorum for the holding of a General Meeting of Shareholders. In addition see "Item 10.B.3(b) Shareholder Rights" regarding conditions for exercising a shareholder's right to vote at a General Meeting of Shareholders.

10.B.6 ***Limitations***

There are no limitations under the Swiss CO or our Articles on the right of non-Swiss residents or nationals to own or vote shares other than the restrictions applicable to all shareholders. But see "Item 10.B.3(b) Shareholder Rights" regarding conditions for exercising an ADR holder's right to vote at a shareholder meeting.

10.B.7 ***Change in Control***

The Articles and the Board Regulations contain no provision that would have an effect of delaying, deferring or preventing a change in control of Novartis and that would operate only with respect to a merger, acquisition or corporate restructuring involving us or any of our subsidiaries.

According to the Swiss Merger Act, shareholders may pass a resolution to merge with another corporation at any time. Such a resolution would require the consent of at least two-thirds of all votes present at the necessary General Meeting of Shareholders.

Under the Swiss Stock Exchange Act, shareholders and groups of shareholders acting in concert who acquire more than 33⅓% of our shares would be under an obligation to make an offer to acquire all remaining Novartis shares.

10.B.8 ***Disclosure of Shareholdings***

Under the Swiss Stock Exchange Act, holders of our voting shares acting alone or acting in concert with others are required to notify us and the SIX Swiss Exchange of the level of their holdings whenever such holdings reach or exceed, or in some cases, fall short of, certain thresholds—3%, 5%, 10%, 15%, 20%, 25%, 33⅓%, 50% and 66⅔%—of our registered share capital. Following receipt of such notification we are required to inform the public by publishing the information via the electronic publication platform operated by the competent Disclosure Office.

An additional disclosure obligation exists under the Swiss CO which requires us to disclose, once a year in the notes to the financial statements published in our annual report, the identity of all of our

shareholders (or related groups of shareholders) who have been granted exemption entitling them to vote more than 2% of our registered share capital, as described in "Item 10.B.3(b) Shareholder Rights".

10.B.9 ***Differences in the Law***

See the references to Swiss law throughout this "Item 10.B Memorandum and Articles of Association".

10.B.10 ***Changes in Capital***

The requirements of the Articles regarding changes in capital are not more stringent than the requirements of Swiss law.

10.C Material contracts

Transactions with GSK

On April 22, 2014 (and as amended and restated on May 29, 2014) we entered into an overarching framework agreement (the "Implementation Agreement") with GSK for the Consumer Healthcare Joint Venture, the Vaccines Sale and the Oncology Acquisition (each as defined below and, together with the Influenza Put Option (as defined below), the "Transactions").

The Transactions are subject to satisfaction of closing conditions, receipt of applicable antitrust and regulatory approvals and completion of applicable employee consultation procedures. We expect the Transactions to close during the first half of 2015.

The Consumer Healthcare Joint Venture, the Vaccines Sale and the Oncology Acquisition are inter-conditional. As such, none of the three component parts will close unless the conditions to that component and both of the other two inter-conditional components are satisfied or, where applicable, waived by October 22, 2015 (or such later date as GSK and Novartis may agree).

Consumer Healthcare Joint Venture with GSK

On April 22, 2014 (and as amended and restated on May 29, 2014), we entered into a Contribution Agreement with GSK under which GSK will contribute its consumer healthcare business (the "GSK Consumer Healthcare Business") and we will contribute our OTC Division, with certain limited exceptions, into a newly-created joint venture which will operate under the GSK Consumer Healthcare name (the "Consumer Healthcare Joint Venture"). In consideration for those contributions, GSK will own 63.5% of the issued share capital of the Consumer Healthcare Joint Venture and we will own 36.5% of the issued share capital of the Consumer Healthcare Joint Venture.

The operation of the Consumer Healthcare Joint Venture will be governed by a Shareholders' Agreement, under which GSK will have the right to appoint seven directors to the board of the Consumer Healthcare Joint Venture and we will have the right to appoint four directors to the board of the Consumer Healthcare Joint Venture. The Shareholders' Agreement also contains certain minority shareholder protections, including the right to exit the Consumer Healthcare Joint Venture under certain circumstances and subject to certain conditions. The Shareholders' Agreement will become operative concurrently with the creation of the Consumer Healthcare Joint Venture.

Sale of Vaccines Business (Excluding our Influenza Vaccines Business) to GSK

On April 22, 2014 (and as amended and restated on May 29, 2014 and as further amended on October 9, 2014), we entered into a Sale and Purchase Agreement with GSK under which we will sell our Vaccines Division (with certain limited exceptions, and except for our influenza vaccines business) to GSK (the "Vaccines Sale") for up to $7.1 billion, consisting of $5.25 billion upfront and up to $1.8 billion in milestones, plus royalties.

Oncology Acquisition from GSK

On April 22, 2014 (and as amended and restated on May 29, 2014 and as further amended and restated on November 21, 2014), we entered into a Sale and Purchase Agreement with GSK under which we will acquire GSK oncology products and certain related assets (the "Oncology Acquisition"). GSK has also agreed to grant us a right of first negotiation over the co-development and commercialisation of GSK's current and future oncology R&D pipeline, excluding oncology vaccines, for a period of twelve and one half years from closing. Novartis will pay an aggregate cash consideration of $16 billion for the Oncology Acquisition. Up to $1.5 billion of this cash consideration is contingent on certain development milestones.

Influenza Vaccines Business Put Option with GSK

On April, 22 2014 (and as amended and restated on May 29, 2014), we entered into a Put Option Deed with GSK pursuant to which we may unilaterally require GSK to acquire our Vaccines Division's influenza vaccines business for $250 million, or certain parts of the influenza vaccines business for a pro-rata amount (the "Influenza Put Option") if the divestment to CSL discussed below is not completed. The Influenza Put Option is exercisable during an 18 month period beginning on the earlier of the day following closing of the Vaccines Sale, and October 22, 2015. Any divestment to GSK under the Influenza Put Option (if exercised) would be subject to applicable antitrust clearances, and satisfaction of certain other conditions.

Sale of Influenza Vaccines Business to CSL

On October 26, 2014, we entered into a Share and Business Sale Agreement with CSL under which we will divest our Vaccines Division's influenza vaccines business to CSL for $275 million. This transaction requires regulatory approvals and is expected to close in the second half of 2015.

Sale of Animal Health Division to Lilly

On April 22, 2014 (as amended on December 17, 2014), we entered into a Stock and Asset Purchase Agreement with Lilly. Under this agreement, Lilly agreed to purchase our Animal Health Division (with certain limited exceptions) for approximately $5.4 billion. This transaction was completed on January 1, 2015.

10.D Exchange controls

There are no Swiss governmental laws, decrees or regulations that restrict, in a manner material to Novartis, the export or import of capital, including any foreign exchange controls, or that generally affect the remittance of dividends or other payments to non-residents or non-citizens of Switzerland who hold Novartis' shares.

10.E Taxation

The taxation discussion set forth below is intended only as a descriptive summary and does not purport to be a complete analysis or listing of all potential tax effects relevant to the ownership or

disposition of our shares or ADRs. The statements of US and Swiss tax laws set forth below are based on the laws and regulations in force as of the date of this 20-F, including the current Convention Between the US and the Swiss Confederation for the Avoidance of Double Taxation with Respect to Taxes on Income, entered into force on December 19, 1997 (the "Treaty"), and the US Internal Revenue Code of 1986, as amended (the "Code"), Treasury regulations, rulings, judicial decisions and administrative pronouncements, and may be subject to any changes in US and Swiss law, and in any double taxation convention or treaty between the US and Switzerland occurring after that date, which changes may have retroactive effect.

Swiss Taxation

Swiss Residents

Withholding Tax on Dividends and Distributions. Dividends which we pay and similar cash or in-kind distributions which we may make to a holder of shares or ADRs (including distributions of liquidation proceeds in excess of the nominal value, stock dividends and, under certain circumstances, proceeds from repurchases of shares by us in excess of the nominal value) are generally subject to a Swiss federal withholding tax (the "Withholding Tax") at a current rate of 35%. Under certain circumstances distributions out of capital contribution reserves made by shareholders after December 31, 1996 are exempt from Withholding Tax. We are required to withhold this Withholding Tax from the gross distribution and to pay the Withholding Tax to the Swiss Federal Tax Administration. The Withholding Tax is refundable in full to Swiss residents who are the beneficial owners of the taxable distribution at the time it is resolved and duly report the gross distribution received on their personal tax return or in their financial statements for tax purposes, as the case may be.

Income Tax on Dividends. A Swiss resident who receives dividends and similar distributions (including stock dividends and liquidation surplus) on shares or ADRs is required to include such amounts in the shareholder's personal income tax return. However, distributions out of qualified capital contribution reserves are not subject to income tax. A corporate shareholder may claim substantial relief from taxation of dividends and similar distributions received if the shares held represent a fair market value of at least CHF 1 million.

Capital Gains Tax upon Disposal of Shares. Under current Swiss tax law, the gain realized on shares held by a Swiss resident who holds shares or ADRs as part of his private property is generally not subject to any federal, cantonal or municipal income taxation on gains realized on the sale or other disposal of shares or ADRs. However, gains realized upon a repurchase of shares by us may be characterized as taxable dividend income if certain conditions are met. Book gains realized on shares or ADRs held by a Swiss corporate entity or by a Swiss resident individual as part of the shareholder's business property are, in general, included in the taxable income of such person. However, the Federal Law on the Direct Federal Tax of December 14, 1990 and several cantonal laws on direct cantonal taxes provide for exceptions for Swiss corporate entities holding more than 10% of our voting stock for more than one year.

Residents of Other Countries

Recipients of dividends and similar distributions on our shares who are neither residents of Switzerland for tax purposes nor holding shares as part of a business conducted through a permanent establishment situated in Switzerland ("Non-resident Holders") are not subject to Swiss income taxes in respect of such distributions. Moreover, gains realized by such recipients upon the disposal of shares are not subject to Swiss income taxes.

Non-resident Holders of shares are, however, subject to the Withholding Tax on dividends and similar distributions mentioned above and under certain circumstances to the Stamp Duty described below. Such Non-resident Holders may be entitled to a partial refund of the Withholding Tax if the country in which they reside has entered into a bilateral treaty for the avoidance of double taxation with Switzerland.

Non-resident Holders should be aware that the procedures for claiming treaty refunds (and the time frame required for obtaining a refund) may differ from country to country. Non-resident Holders should consult their own tax advisors regarding receipt, ownership, purchase, sale or other dispositions of shares or ADRs and the procedures for claiming a refund of the Withholding Tax.

As of January 1, 2015, Switzerland has entered into bilateral treaties for the avoidance of double taxation with respect to income taxes with the following countries, whereby a part of the above-mentioned Withholding Tax may be refunded (subject to the limitations set forth in such treaties):

Albania	France	Latvia	Serbia
Algeria	Germany	Lithuania	Singapore
Armenia	Georgia	Luxembourg	Slovak Republic
Australia	Ghana	Macedonia	Slovenia
Austria	Greece	Malaysia	South Africa
Azerbaijan	Hong Kong	Malta	Spain
Bahrain	Hungary	Mexico	Sri Lanka
Bangladesh	Iceland	Moldova	Sweden
Belarus	India	Mongolia	Taiwan
Belgium	Indonesia	Montenegro	Tajikistan
Bulgaria	Iran	Morocco	Thailand
Canada	Israel	Netherlands	Trinidad and Tobago
Chile	Italy	New Zealand	Tunisia
China	Ivory Coast	Norway	Turkey
Colombia	Republic of Ireland	Pakistan	Turkmenistan
Croatia	Jamaica	Peru	Ukraine
Czech Republic	Japan	Philippines	United Arab Emirates
Denmark	Kazakhstan	Poland	United Kingdom
Ecuador	Republic of Korea	Portugal	United States of America
Egypt	(South Korea)	Quatar	Uruguay
Estonia	Kuwait	Romania	Uzbekistan
Finland	Kyrgyzstan	Russia	Venezuela
			Vietnam

The tax treaty with Bahrain is not applicable to the healthcare industry. Tax treaty negotiations are under way, or have been concluded, with Argentina (treaty not yet in force but provisionally applicable as from January 1, 2001), Brazil, Costa Rica, Libya, North Korea, Oman, Saudi Arabia, Senegal, Syria, and Zimbabwe. Tax treaty negotiations between Switzerland and some of the countries listed in the immediately preceding sentence have been ongoing for an extended period of time, and we are not certain when or if such negotiations will be completed, and when or if the corresponding treaties will come into effect.

A Non-resident Holder of shares or ADRs will not be liable for any Swiss taxes other than the Withholding Tax described above and, if the transfer occurs through or with a Swiss bank or other Swiss securities dealer, the Stamp Duty described below. If, however, the shares or ADRs of Non-resident Holders can be attributed to a permanent establishment or a fixed place of business maintained by such person within Switzerland during the relevant tax year, the shares or ADRs may be subject to Swiss income taxes in respect of income and gains realized on the shares or ADRs and such person may qualify for a full refund of the Withholding Tax based on Swiss tax law.

Residents of the US. A Non-resident Holder who is a resident of the US for purposes of the Treaty is eligible for a reduced rate of tax on dividends equal to 15% of the dividend, provided that such holder (i) qualifies for benefits under the Treaty, (ii) holds, directly and indirectly, less than 10% of our voting

stock, and (iii) does not conduct business through a permanent establishment or fixed base in Switzerland to which the shares or ADRs are attributable. Such an eligible holder must apply for a refund of the amount of the Withholding Tax in excess of the 15% Treaty rate. A Non-resident Holder who is a resident of the US for purposes of the Treaty is eligible for a reduced rate of tax on dividends equal to 5% of the dividend, provided that such holder (i) is a company, (ii) qualifies for benefits under the Treaty, (iii) holds directly at least 10% of our voting stock, and (iv) does not conduct business through a permanent establishment or fixed place of business in Switzerland to which the shares or ADRs are attributable. Such an eligible holder must apply for a refund of the amount of the Withholding Tax in excess of the 5% Treaty rate. Claims for refunds must be filed on Swiss Tax Form 82 (82C for corporations; 82I for individuals; 82E for other entities), which may be obtained from any Swiss Consulate General in the US or from the Federal Tax Administration of Switzerland at the address below, together with an instruction form. Four copies of the form must be duly completed, signed before a notary public of the US, and sent to the Federal Tax Administration of Switzerland, Eigerstrasse 65, CH-3003 Berne, Switzerland. The form must be accompanied by suitable evidence of deduction of Swiss tax withheld at source, such as certificates of deduction, signed bank vouchers or credit slips. The form may be filed on or after July 1 or January 1 following the date the dividend was payable, but no later than December 31 of the third year following the calendar year in which the dividend became payable. For US resident holders of ADRs, JPMorgan Chase Bank, N.A., as Depositary, will comply with these Swiss procedures on behalf of the holders, and will remit the net amount to the holders.

Stamp Duty upon Transfer of Securities. The sale of shares, whether by Swiss residents or Non-resident Holders, may be subject to federal securities transfer Stamp Duty of 0.15%, calculated on the sale proceeds, if the sale occurs through or with a Swiss bank or other Swiss securities dealer, as defined in the Swiss Federal Stamp Duty Act. The Stamp Duty has to be paid by the securities dealer and may be charged to the parties in a taxable transaction who are not securities dealers. Stamp Duty may also be due if a sale of shares occurs with or through a non-Swiss bank or securities dealer, provided (i) such bank or dealer is a member of the SIX, and (ii) the sale takes place on the SIX. In addition to this Stamp Duty, the sale of shares by or through a member of the SIX may be subject to a minor stock exchange levy.

US Federal Income Taxation

The following is a general discussion of the material US federal income tax consequences of the ownership and disposition of our shares or ADRs that may be relevant to you if you are a US Holder (as defined below). Because this discussion does not consider any specific circumstances of any particular holder of our shares or ADRs, persons who are subject to US taxation are strongly urged to consult their own tax advisers as to the overall US federal, state and local tax consequences, as well as to the overall Swiss and other foreign tax consequences, of the ownership and disposition of our shares or ADRs. In particular, additional or different rules may apply to US expatriates, banks and other financial institutions, regulated investment companies, traders in securities who elect to apply a mark-to-market method of accounting, dealers in securities or currencies, tax-exempt entities, insurance companies, broker-dealers, investors liable for alternative minimum tax, investors that hold shares or ADRs as part of a straddle, hedging or conversion transaction, holders whose functional currency is not the US dollar, partnerships or other pass through entities, persons who acquired our shares pursuant to the exercise of employee stock options or otherwise as compensation and persons who hold directly, indirectly or by attribution, 10% or more of the voting power of our outstanding shares. This discussion generally applies only to US Holders who hold the shares or ADRs as a capital asset (generally, for investment purposes), and whose functional currency is the US dollar. Investors are urged to consult their own tax advisors concerning whether they are eligible for benefits under the Treaty.

For purposes of this discussion, a "US Holder" is a beneficial owner of our shares or ADRs who is (i) an individual who is a citizen or resident of the US for US federal income tax purposes, (ii) a corporation (or other entity taxable as a corporation for US federal income tax purposes) created or organized in or under the laws of the US or a state thereof or the District of Columbia, (iii) an estate the

income of which is subject to US federal income taxation regardless of its source, or (iv) a trust (i) subject to the primary supervision of a US court and the control of one or more US persons or (ii) that has a valid election in place to be treated as a US person. If a partnership (or other entity treated as a partnership for US federal income tax purposes) holds shares or ADRs, the tax treatment of a partner generally will depend upon the status of the partner and the activities of the partnership. Partners in a partnership that holds shares or ADRs are urged to consult their own tax advisor regarding the specific tax consequences of the owning and disposing of such shares or ADRs by the partnership.

For US federal income tax purposes, a US Holder of ADRs generally will be treated as the beneficial owner of our shares represented by the ADRs. However, see the discussion below under "—Dividends" regarding certain statements made by the US Treasury concerning depositary arrangements.

This discussion assumes that each obligation in the Deposit Agreement and any related agreement will be performed in accordance with its terms.

Dividends. US Holders will be required to include in gross income, as an item of ordinary income, the full amount (including the amount of any Withholding Tax) of a dividend paid with respect to our shares or ADRs at the time that such dividend is received by the US Holder, in the case of shares, or by the Depository, in the case of ADRs. For this purpose, a "dividend" will include any distribution paid by us with respect to our shares or ADRs (other than certain pro rata distributions of our capital stock) paid out of our current or accumulated earnings and profits, as determined under US federal income tax principles. To the extent the amount of a distribution by us exceeds our current and accumulated earnings and profits, such excess will first be treated as a tax-free return of capital to the extent of a US Holder's tax basis in the shares or ADRs (with a corresponding reduction in such tax basis), and thereafter will be treated as capital gain, which will be long-term capital gain if the US Holder held our shares or ADRs for more than one year. Under the Code, dividend payments by us on the shares or ADRs are not eligible for the dividends received deduction generally allowed to corporate shareholders.

Dividend income in respect of our shares or ADRs will constitute income from sources outside the US for US foreign tax credit purposes. Subject to the limitations and conditions provided in the Code, US Holders generally may claim as a credit against their US federal income tax liability, any Withholding Tax withheld from a dividend. The rules governing the foreign tax credit are complex. Each US Holder is urged to consult its own tax advisor concerning whether, and to what extent, a foreign tax credit will be available with respect to dividends received from us. Alternatively, a US Holder may claim the Withholding Tax as a deduction for the taxable year within which the Withholding Tax is paid or accrued, provided a deduction is claimed for all of the foreign income taxes the US Holder pays or accrues in the particular year. A deduction does not reduce US tax on a dollar-for-dollar basis like a tax credit. The deduction, however, is not subject to the limitations applicable to foreign tax credits.

The US Treasury has expressed concern that parties to whom ADRs are released may be taking actions inconsistent with the claiming of foreign tax credits for US Holders of ADRs. Accordingly, the summary above of the creditability of the Withholding Tax could be affected by future actions that may be taken by the US Treasury.

In general, a US Holder will be required to determine the amount of any dividend paid in Swiss francs, including the amount of any Withholding Tax imposed thereon, by translating the Swiss francs into US dollars at the spot rate on the date the dividend is actually or constructively received by a US Holder, in the case of shares, or by the Depositary, in the case of ADRs, regardless of whether the Swiss francs are in fact converted into US dollars. If a US Holder converts the Swiss francs so received into US dollars on the date of receipt, the US Holder generally should not recognize foreign currency gain or loss on such conversion. If a US Holder does not convert the Swiss francs so received into US dollars on the date of receipt, the US Holder will have a tax basis in the Swiss francs equal to the US dollar value on such date. Any foreign currency gain or loss that a US Holder recognizes on a subsequent conversion or other disposition of the Swiss francs generally will be treated as US source ordinary income or loss.

For a non-corporate US Holder, the US dollar amount of any dividends paid to it prior to January 1, 2013 that constitute qualified dividend income generally will be taxable at a maximum rate of 15%. For tax years beginning after 2012, the top rate is 20% for taxpayers with incomes exceeding $400,000 ($450,000 for joint filing taxpayers) provided that the US Holder meets certain holding period and other requirements. In addition, the dividends could be subject to a 3.8% net investment income tax. This tax is applied against the lesser of the US Holder's net investment income or modified adjusted gross income over $200,000 ($250,000 for joint filing taxpayers). We currently believe that dividends paid with respect to our shares and ADRs will constitute qualified dividend income for US federal income tax purposes. However, the US Treasury and the US Internal Revenue Service ("IRS") have announced their intention to promulgate rules pursuant to which US Holders of shares and ADRs, among others, will be permitted to rely on certifications from issuers to establish that dividends are treated as qualified dividends. US Holders of shares or ADRs are urged to consult their own tax advisors regarding the availability to them of the reduced dividend rate in light of their own particular situation and the computations of their foreign tax credit limitation with respect to any qualified dividends paid to them, as applicable.

Sale or Other Taxable Disposition. Upon a sale or other taxable disposition of shares or ADRs, US Holders generally will recognize capital gain or loss in an amount equal to the difference between the US dollar value of the amount realized on the disposition and the US Holder's tax basis (determined in US dollars) in the shares or ADRs. This capital gain or loss generally will be US source gain or loss and will be treated as long-term capital gain or loss if the holding period in the shares or ADRs exceeds one year. In the case of certain US Holders (including individuals), any long term capital gain generally will be subject to US federal income tax at preferential rates, which rates are subject to a maximum of 20% for taxpayers with incomes exceeding $400,000 ($450,000 for joint filing taxpayers) for gains recognized after January 1, 2013. In addition, the gains could be subject to a 3.8% investment income tax. This tax is applied against the lesser of the US Holder's net investment income or modified adjusted gross income over $200,000 ($250,000 for joint filing taxpayers). The deductibility of capital losses is subject to significant limitations under the Code. Deposits or withdrawals of our shares by US Holders in exchanges for ADRs will not result in the realization of gain or loss for US federal income tax purposes.

US Information Reporting and Backup Withholding. Dividend payments with respect to shares or ADRs and proceeds from the sale, exchange or other disposition of shares or ADRs received in the United States or through US-related financial intermediaries, may be subject to information reporting to the IRS and possible US backup withholding. Certain exempt recipients (such as corporations) are not subject to these information reporting and backup withholding requirements. Backup withholding will not apply to a US Holder who furnishes a correct taxpayer identification number and makes any other required certification or who is otherwise exempt from backup withholding. Any US Holders required to establish their exempt status generally must provide a properly-executed IRS Form W-9 (Request for Taxpayer Identification Number and Certification). Backup withholding is not an additional tax. Amounts withheld as backup withholding may be credited against a US Holder's US federal income tax liability, and a US Holder may obtain a refund of any excess amounts withheld under the backup withholding rules by timely filing the appropriate claim for refund with the IRS and furnishing any required information.

10.F Dividends and paying agents

Not applicable.

10.G Statement by experts

Not applicable.

10.H Documents on display

Any statement in this Form 20-F about any of our contracts or other documents is not necessarily complete. If the contract or document is filed as an exhibit to the Form 20-F the contract or document is deemed to modify the description contained in this Form 20-F. You must review the exhibits themselves for a complete description of the contract or document.

You may review a copy of our filings with the SEC, as well as other information furnished to the SEC, including exhibits and schedules filed with it, at the SEC's public reference room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information. In addition, the SEC maintains an Internet site at http://www.sec.gov that contains reports and other information regarding issuers that file electronically with the SEC. These SEC filings are also available to the public from commercial document retrieval services.

We are required to file or furnish reports and other information with the SEC under the Securities Exchange Act of 1934 and regulations under that act. As a foreign private issuer, we are exempt from the rules under the Exchange Act prescribing the form and content of proxy statements and our officers, directors and principal shareholders are exempt from the reporting and short swing profit recovery provisions contained in Section 16 of the Exchange Act.

10.I Subsidiary Information

Not applicable.

Item 11. Quantitative and Qualitative Disclosures about Market Risk

The major financial risks facing the Group are managed centrally by Group Treasury. We have a written Treasury Directive and have implemented a strict segregation of front office and back office controls. The Group does regular reconciliations of its positions with its counterparties. In addition the Treasury function is included in management's internal control assessment.

For information about the effects of currency fluctuations and how we manage currency risk, see "Item 5. Operating and Financial Review and Prospects—Item 5.B Liquidity and Capital Resources".

For further information, see "Item 18. Financial Statements—Note 29".

Item 12. Description of Securities Other than Equity Securities

12.A Debt Securities

Not applicable.

12.B Warrants and Rights

Not applicable.

12.C Other Securities

Not applicable.

12.D American Depositary Shares

Fees Payable By ADR Holders

According to our Deposit Agreement with the ADS depositary, JPMorgan Chase Bank (JPMorgan), holders of our ADRs may have to pay to JPMorgan, either directly or indirectly, fees or charges up to the amounts set forth below:

Category	Depositary actions	Associated Fee
Depositing or substituting underlying shares	Acceptance of shares surrendered, and issuance of ADRs in exchange, including surrenders and issuances in respect of: —Share distributions —Stock split —Rights —Merger —Exchange of shares or any other transaction or event or other distribution affecting the ADSs or the deposited shares	$5.00 for each 100 ADSs (or portion thereof) evidenced by the new ADRs delivered
Withdrawing underlying shares	Acceptance of ADRs surrendered for withdrawal of deposited shares	$5.00 for each 100 ADSs (or portion thereof) evidenced by the ADRs surrendered
Selling or exercising rights	Distribution or sale of shares, the fee being in an amount equal to the fee for the execution and delivery of ADRs which would have been charged as a result of the deposit of such shares	$5.00 for each 100 ADSs (or portion thereof)
Transferring, splitting or grouping receipts	Transfers, combining or grouping of depositary receipts	$2.50 per ADR
Expenses of the depositary	Expenses incurred on behalf of holders in connection with —compliance with foreign exchange control regulations or any law or regulation relating to foreign investment —the depositary's or its custodian's compliance with applicable law, rule or regulation. —stock transfer or other taxes and other governmental charges —cable, telex and facsimile transmission and delivery —expenses of the depositary in connection with the conversion of foreign currency into US dollars (which are paid out of such foreign currency) —any other charge payable by any of the depositary or its agents	Expenses payable at the sole discretion of the Depositary by billing Holders or by deducting charges from one or more cash dividends or other cash distributions.
Advance tax relief	Tax relief/reclamation process for qualified holders.	A depositary service charge of $0.0035 per ADS

Fees Payable By The Depositary To The Issuer

Pursuant to an agreement effective as of May 11, 2012, JPMorgan, as depositary, has agreed to reimburse Novartis $1.0 million per quarter, a total of $4.0 million per contract year, for expenses incurred directly related to our ADR program (the "Program") which were incurred during the contract year, including Program-related legal fees, expenses related to investor relations in the US, US investor presentations, ADR-related financial advertising and public relations, fees and expenses of JPMorgan as administrator of the ADR Direct Plan, reasonable accountants' fees in relation to our Form 20-F, maintenance and broker reimbursement expenses. Because our expenses related to these categories exceed $4.0 million (see, for example, the amount of our accountants' fees set forth at "Item 16C. Principal Accountant Fees and Services—Auditing and Additional Fees"), the $4.0 million cannot be deemed to have reimbursed us for any particular one or more of these expenses.

JPMorgan has further agreed not to seek reimbursement of up to $50,000 of out-of-pocket expenses incurred annually in providing such administrative services.

PART II

Item 13. Defaults, Dividend Arrearages and Delinquencies

None.

Item 14. Material Modifications to the Rights of Security Holders and Use of Proceeds

None.

Item 15. Controls and Procedures

(a) Novartis AG's chief executive officer and chief financial officer, after evaluating the effectiveness of our disclosure controls and procedures (as defined in Exchange Act Rule 13a-15(e)) as of the end of the period covered by this Form 20-F, have concluded that, as of such date, our disclosure controls and procedures were effective.

(b) Report of Novartis Management on Internal Control Over Financial Reporting: Novartis' Board of Directors and management of the Group are responsible for establishing and maintaining adequate internal control over financial reporting. The Group's internal control system was designed to provide reasonable assurance to the Group's management and Board of Directors regarding the reliability of financial reporting and the preparation and fair presentation of its published consolidated financial statements.

All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective may not prevent or detect misstatements and can provide only reasonable assurance with respect to financial statement preparation and presentation. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Group management assessed the effectiveness of the Group's internal control over financial reporting as of December 31, 2014. In making this assessment, it used the criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on our assessment management concluded that, as of December 31, 2014, Group's internal control over financial reporting is effective based on those criteria.

PricewaterhouseCoopers AG, Switzerland (PwC), an independent registered public accounting firm, has issued an opinion on the effectiveness of the Group's internal control over financial reporting which is included under "Item 18. Financial Statements" on page F-2.

(c) See the report of PwC, an independent registered public accounting firm, included under "Item 18. Financial Statements" on page F-2.

(d) There were no changes to our internal control over financial reporting that occurred during the period covered by this Form 20-F that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 16A. Audit Committee Financial Expert

Our Audit and Compliance Committee has determined that Srikant Datar and Ulrich Lehner each possess specific accounting and financial management expertise and that each is an Audit Committee Financial Expert as defined by the US Securities and Exchange Commission (SEC). The Board of Directors has also determined that other members of the Audit and Compliance Committee have sufficient experience and ability in finance and compliance matters to enable them to adequately discharge their responsibilities.

Item 16B. Code of Ethics

In addition to our Code of Conduct, which is applicable to all of our associates, we have adopted a Code of Ethical Conduct that imposes additional obligations on our principal executive officer, principal financial officer, principal accounting officer, and persons performing similar functions. This document is accessible on our Internet website at

http://www.novartis.com/investors/corporate-governance.shtml

Item 16C. Principal Accountant Fees and Services

Refer to "Item 6. Directors, Senior Management and Employees—Item 6.C Board Practices—Our Independent External Auditors."

Item 16D. Exemptions from the Listing Standards for Audit Committees

Not Applicable.

Item 16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers

2014	Total Number of Shares Purchased (a)[1]	Average Price Paid per Share in $ (b)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (c)[2]	Maximum Approximate Value of Shares that may yet be purchased under the Plans or Programs in CHF (d)	Maximum Approximate Value of Shares that may yet be purchased under the Plans or Programs in $ (e)
				(CHF millions)	($ millions)[3]
Jan. 1-31	3,222,266	80.09	270,000	7,449	8,246
Feb. 1-28	10,989,440	81.36	2,160,000	7,292	7,845
Mar. 1-31	15,117,915	82.40	2,760,000	7,091	7,990
Apr. 1-30	5,233,189	85.02	2,480,000	6,906	7,785
May 1-31	13,295,490	88.99	2,390,000	6,717	7,602
Jun. 1-30	2,605,226	89.87	2,355,000	6,528	7,322
Jul. 1-31	2,870,680	89.56	2,680,000	6,312	6,944
Aug. 1-31	2,609,387	87.67	2,420,000	6,119	6,682
Sep. 1-30	2,919,095	93.41	2,470,000	5,902	6,208
Oct. 1-31	4,708,157	90.73	2,700,000	5,671	5,909
Nov. 1-30	13,394,848	93.89	2,230,000	5,469	5,657
Dec. 1-31	2,323,253	94.60	2,125,000	5,274	5,328
Total	**79,288,946**	**87.32**	**27,040,000**		

(1) Column (a) shows shares we purchased as part of our sixth share repurchase program plus the following types of share purchases outside of our publicly announced repurchase program: (1) shares which we purchased on the open market; and (2) shares which we purchased from Swiss employees who had obtained the shares through a Novartis Employee Ownership Plan. See "Item 6. Directors, Senior Management and Employees—6.B Compensation—Compensation for Novartis Associates."

(2) Column (c) shows shares purchased as part of our sixth share repurchase program which was approved by the shareholders February 26, 2008 for an amount of up to CHF 10.0 billion. See "Item 6. Directors, Senior Management and Employees—6.C Board Practices—Our Shares and Our Shareholders—Share Repurchase Programs."

(3) Column (e) shows the Swiss franc amount from column (d) converted into US dollars as of the month-end, using the Swiss franc/US dollar exchange rate at the applicable month-end.

Item 16F. Change in Registrant's Certifying Accountant

Not applicable.

Item 16G. Corporate Governance

Refer to "Item 6. Directors, Senior Management and Employees—Item 6.C Board Practices—Our Corporate Governance Framework."

Item 16H. Mine Safety Disclosure

Not applicable.

PART III

Item 17. Financial Statements

See "Item 18. Financial Statements."

Item 18. Financial Statements

The following financial statements are filed as part of this annual report on Form 20-F.

Item 19. Exhibits

1.1 Articles of Incorporation, as amended February 23, 2012 (English translation) (incorporated by reference to Exhibit 1.1 to the Form 20-F for the year ended December 31, 2012 as filed with the SEC on January 23, 2013).

1.2 Regulations of the Board and Committee Charters of Novartis AG, amended as of January 1, 2014 (incorporated by reference to Exhibit 1.2 to the Form 20-F for the year ended December 31, 2013 as filed with the SEC on January 29, 2014).

2.1 Restricted Issuance Agreement dated as of January 11, 2002 among Novartis AG, J.P. Morgan Chase & Co., as depositary, and all holders from time to time of ADRs representing ADSs issued thereunder (incorporated by reference to Exhibit 4 to the Registration Statement on Form F-3, File No. 333-81862, as filed with the SEC on January 31, 2002).

2.2 Letter Agreement dated October 27, 2004 between Novartis AG and JPMorgan Chase Bank, as depositary (incorporated by reference to Exhibit 2.2 to the Form 20-F for the year ended December 31, 2004 as filed with the SEC on January 28, 2005).

2.3 Letter Agreement dated September 12, 2005 between Novartis AG and JPMorgan Chase Bank, as depositary (incorporated by reference to Exhibit 2.3 to the Form 20-F for the year ended December 31, 2005 as filed with the SEC on January 30, 2006).

2.4 Letter Agreement dated December 14, 2007 between Novartis AG and JPMorgan Chase Bank, as depositary (incorporated by reference to Exhibit 2.4 to the Form 20-F for the year ended December 31, 2007 as filed with the SEC on January 28, 2008).

4.1 Implementation Agreement made on April 22, 2014, and amended and restated on May 29, 2014, between GlaxoSmithKline plc and Novartis AG.

4.2 Contribution Agreement relating to the Consumer Healthcare Joint Venture made on April 22, 2014, and amended and restated on May 29, 2014, between Novartis AG, GlaxoSmithKline plc and Leo Constellation Limited. Confidential portions of this exhibit have been omitted pursuant to a request for confidential treatment and filed separately with the SEC.

4.3 Share and Business Sale Agreement relating to the Vaccines Group made on April 22, 2014, amended and restated on May 29, 2014, and further amended on October 9, 2014, between Novartis AG and GlaxoSmithKline plc. Confidential portions of this exhibit have been omitted pursuant to a request for confidential treatment and filed separately with the SEC.

4.4 Sale and Purchase Agreement made on April 22, 2014, as amended and restated on May 29, 2014, and as further amended and restated on November 21, 2014, between GlaxoSmithKline plc and Novartis AG. Confidential portions of this exhibit have been omitted pursuant to a request for confidential treatment and filed separately with the SEC.

4.5 Put Option Deed relating to all or part of the Influenza Business of the Novartis Group made on April 22, 2014, and amended and restated on May 29, 2014, between Novartis AG and GlaxoSmithKline plc. Confidential portions of this exhibit have been omitted pursuant to a request for confidential treatment and filed separately with the SEC.

4.6 Stock and Asset Purchase Agreement made on April 22, 2014, as amended on December 17, 2014, between Novartis AG and Eli Lilly and Company. Confidential portions of this exhibit have been omitted pursuant to a request for confidential treatment and filed separately with the SEC.

4.7	Share and Business Sale Agreement relating to the Flu Group made on October 26, 2014, between Novartis AG and CSL Limited. Confidential portions of this exhibit have been omitted pursuant to a request for confidential treatment and filed separately with the SEC.
6.1	For earnings per share calculation, see "Item 18. Financial Statements—Note 7."
8.1	For a list of all of our principal Group subsidiaries and associated companies, see "Item 18. Financial Statements—Note 32."
12.1	Certification of Joseph Jimenez, Chief Executive Officer of Novartis AG, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
12.2	Certification of Harry Kirsch, Chief Financial Officer of Novartis AG, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
13.1	Certification of Joseph Jimenez, Chief Executive Officer of Novartis AG, pursuant to Section 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
13.2	Certification of Harry Kirsch, Chief Financial Officer of Novartis AG, pursuant to Section 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
15.1	Consent of Independent Registered Public Accounting Firm, PricewaterhouseCoopers AG, to the incorporation by reference of the audit report contained in this Form 20-F into Novartis AG's Registration Statements on Form S-8 filed on October 1, 2004 (File No. 333-119475), on Form S-8 filed on September 5, 2006 (File No. 333-137112), on Form S-8 filed on October 29, 2009 (File No. 333-162727), on Form S-8 filed on January 18, 2011 (File No. 333-171739), on Form S-8 filed on April 8, 2011 (File No. 333-173382), on Form S-8 filed on September 12, 2014 (File No. 333-198706), and on Form F-3 filed on September 21, 2012 (File No. 333-183955).

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

NOVARTIS AG

By: /s/ HARRY KIRSCH

Name: Harry Kirsch
Title: *Chief Financial Officer, Novartis Group*

By: /s/ FELIX R. EHRAT

Name: Felix R. Ehrat
Title: *General Counsel, Novartis Group*

Date: January 27, 2015

NOVARTIS GROUP
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of Novartis AG, Basel

In our opinion, the accompanying consolidated balance sheets and the related consolidated income statements, consolidated statements of comprehensive income, consolidated statements of changes in equity, consolidated cash flow statements and notes (pages F-4 through F-117 in this Form 20-F) present fairly, in all material respects, the financial position of Novartis AG and its consolidated subsidiaries (Group or Company) at December 31, 2014 and December 31, 2013, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2014 in conformity with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2014, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

The Novartis' Board of Directors and management of the Group are responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying "*Report of Novartis Management on Internal Control Over Financial Reporting*" appearing under Item 15(b). Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board of the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with IFRS, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk

that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

PricewaterhouseCoopers AG

/s/ BRUNO ROSSI	/s/ STEPHEN JOHNSON
Bruno Rossi *Audit expert* *Auditor in charge*	Stephen Johnson *Global relationship partner*

Basel, January 26, 2015

NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED INCOME STATEMENTS

(For the years ended December 31, 2014, 2013 and 2012)

	Note	2014	2013	2012
		$ m	$ m	$ m
Net sales to third parties from continuing operations	3	**52,180**	**51,869**	**51,080**
Sales to discontinuing segments		239	221	250
Net sales from continuing operations	3	**52,419**	**52,090**	**51,330**
Other revenues		1,215	626	641
Cost of goods sold		(17,345)	(16,579)	(15,866)
Gross profit from continuing operations		**36,289**	**36,137**	**36,105**
Marketing & Sales		(12,377)	(12,638)	(12,587)
Research & Development		(9,086)	(9,071)	(8,588)
General & Administration		(2,616)	(2,603)	(2,530)
Other income		1,391	1,205	943
Other expense		(2,512)	(2,047)	(1,836)
Operating income from continuing operations	3	**11,089**	**10,983**	**11,507**
Income from associated companies	4	1,918	599	549
Interest expense	5	(704)	(683)	(724)
Other financial income and expense	5	(31)	(92)	(96)
Income before taxes from continuing operations		**12,272**	**10,807**	**11,236**
Taxes	6	(1,545)	(1,498)	(1,706)
Net income from continuing operations		**10,727**	**9,309**	**9,530**
Net loss from discontinuing operations	30	(447)	(17)	(147)
Group net income		**10,280**	**9,292**	**9,383**
Attributable to:				
Shareholders of Novartis AG		*10,210*	*9,175*	*9,270*
Non-controlling interests		*70*	*117*	*113*
Basic earnings per share ($) from continuing operations		4.39	3.76	3.89
Basic earnings per share ($) from discontinuing operations		(0.18)	0.00	(0.06)
Total basic earnings per share ($)	7	**4.21**	**3.76**	**3.83**
Diluted earnings per share ($) from continuing operations		4.31	3.70	3.85
Diluted earnings per share ($) from discontinuing operations		(0.18)	0.00	(0.06)
Total diluted earnings per share ($)	7	**4.13**	**3.70**	**3.79**

The accompanying Notes form an integral part of the consolidated financial statements.

NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(For the years ended December 31, 2014, 2013 and 2012)

	Note	2014	2013	2012
		$ m	$ m	$ m
Net income		**10,280**	**9,292**	**9,383**
Other comprehensive income to be eventually recycled into the consolidated income statement:				
Fair value adjustments on marketable securities, net of taxes	8.1	89	132	75
Fair value adjustments on deferred cash flow hedges, net of taxes	8.1	21	41	41
Total fair value adjustments on financial instruments, net of taxes	8.1	110	173	116
Novartis share of other items recorded in comprehensive income recognized by associated companies, net of taxes	8.2	(5)	5	(107)
Currency translation effects	8.3	(2,220)	676	808
Total of items to eventually recycle		**(2,115)**	**854**	**817**
Other comprehensive income never to be recycled into the consolidated income statement:				
Actuarial (losses)/gains from defined benefit plans, net of taxes	8.4	(822)	1,504	(1,581)
Total comprehensive income		**7,343**	**11,650**	**8,619**
Attributable to:				
Shareholders of Novartis AG		*7,274*	*11,538*	*8,507*
Continuing operations		*7,820*	*11,512*	*8,711*
Discontinuing operations		*(546)*	*26*	*(204)*
Non-controlling interests		*69*	*112*	*112*

The accompanying Notes form an integral part of the consolidated financial statements.

NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(For the years ended December 31, 2014, 2013 and 2012)

	Note	Share capital	Treasury shares	Retained earnings	Total value adjustments	Issued share capital and reserves attributable to Novartis shareholders	Non-controlling interests	Total equity
		$ m	$ m	$ m	$ m	$ m	$ m	$ m
Total equity at January 1, 2012		**1,016**	**(121)**	**66,334**	**(1,336)**	**65,893**	**96**	**65,989**
Net income				9,270		9,270	113	9,383
Other comprehensive income	8			(107)	(656)	(763)	(1)	(764)
Total comprehensive income				**9,163**	**(656)**	**8,507**	**112**	**8,619**
Dividends	9.1			(6,030)		(6,030)		(6,030)
Purchase of treasury shares	9.2		(5)	(500)		(505)		(505)
Increase in equity from exercise of options and employee transactions	9.4		7	409		416		416
Reduction of share capital	9.5	(15)	21	(6)				
Equity-based compensation	9.6		6	850		856		856
Changes in non-controlling interests	9.8						(82)	(82)
Total of other equity movements		**(15)**	**29**	**(5,277)**		**(5,263)**	**(82)**	**(5,345)**
Total equity at December 31, 2012		**1,001**	**(92)**	**70,220**	**(1,992)**	**69,137**	**126**	**69,263**
Net income				9,175		9,175	117	9,292
Other comprehensive income	8			5	2,358	2,363	(5)	2,358
Total comprehensive income				**9,180**	**2,358**	**11,538**	**112**	**11,650**
Dividends	9.1			(6,100)		(6,100)		(6,100)
Purchase of treasury shares	9.2		(22)	(2,968)		(2,990)		(2,990)
Increase in equity from exercise of options and employee transactions	9.4		19	1,672		1,691		1,691
Equity-based compensation	9.6		6	1,071		1,077		1,077
Impact of change in ownership of consolidated entities	9.7			(10)		(10)		(10)
Changes in non-controlling interests	9.8						(109)	(109)
Total of other equity movements			**3**	**(6,335)**		**(6,332)**	**(109)**	**(6,441)**
Total equity at December 31, 2013		**1,001**	**(89)**	**73,065**	**366**	**74,343**	**129**	**74,472**
Net income				10,210		10,210	70	10,280
Other comprehensive income	8			(5)	(2,931)	(2,936)	(1)	(2,937)
Total comprehensive income				**10,205**	**(2,931)**	**7,274**	**69**	**7,343**
Dividends	9.1			(6,810)		(6,810)		(6,810)
Purchase of treasury shares	9.2		(43)	(6,883)		(6,926)		(6,926)
Treasury share repurchase commitment under a share buy-back trading plan	9.3			(658)		(658)		(658)
Increase in equity from exercise of options and employee transactions	9.4		23	2,377		2,400		2,400
Equity-based compensation	9.6		6	1,137		1,143		1,143
Changes in non-controlling interests	9.8						(120)	(120)
Total of other equity movements			**(14)**	**(10,837)**		**(10,851)**	**(120)**	**(10,971)**
Total equity at December 31, 2014		**1,001**	**(103)**	**72,433**	**(2,565)**	**70,766**	**78**	**70,844**

The accompanying Notes form an integral part of the consolidated financial statements.

NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED BALANCE SHEETS

(At December 31, 2014 and 2013)

	Note	2014	2013
		$ m	$ m
Assets			
Non-current assets			
Property, plant & equipment	10	15,983	18,197
Goodwill	11	29,311	31,026
Intangible assets other than goodwill	11	23,832	27,841
Investments in associated companies	4	8,432	9,225
Deferred tax assets	12	7,994	7,375
Financial assets	13	1,720	1,523
Other non-current assets	13	554	525
Total non-current assets related to continuing operations		**87,826**	**95,712**
Current assets			
Inventories	14	6,093	7,267
Trade receivables	15	8,275	9,902
Marketable securities, commodities, time deposits and derivative financial instruments	16	839	2,535
Cash and cash equivalents	16	13,023	6,687
Other current assets	17	2,530	3,392
Total current assets related to continuing operations		**30,760**	**29,783**
Assets related to discontinuing operations	30	6,801	759
Total current assets		**37,561**	**30,542**
Total assets		**125,387**	**126,254**
Equity and liabilities			
Equity			
Share capital	18	1,001	1,001
Treasury shares	18	(103)	(89)
Reserves		69,868	73,431
Issued share capital and reserves attributable to Novartis AG shareholders		**70,766**	**74,343**
Non-controlling interests		78	129
Total equity		**70,844**	**74,472**
Liabilities			
Non-current liabilities			
Financial debts	19	13,799	11,242
Deferred tax liabilities	12	6,099	6,904
Provisions and other non-current liabilities	20	7,672	7,268
Total non-current liabilities related to continuing operations		**27,570**	**25,414**
Current liabilities			
Trade payables		5,419	6,148
Financial debts and derivative financial instruments	21	6,612	6,776
Current income tax liabilities		2,076	2,459
Provisions and other current liabilities	22	10,448	10,935
Total current liabilities related to continuing operations		**24,555**	**26,318**
Liabilities related to discontinuing operations	30	2,418	50
Total current liabilities		**26,973**	**26,368**
Total liabilities		**54,543**	**51,782**
Total equity and liabilities		**125,387**	**126,254**

The accompanying Notes form an integral part of the consolidated financial statements.

NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED CASH FLOW STATEMENTS

(For the years ended December 31, 2014, 2013 and 2012)

	Note	2014	2013	2012
		$ m	$ m	$ m
Net income from continuing operations		**10,727**	**9,309**	**9,530**
Reversal of non-cash items	23.1	6,725	7,179	7,666
Dividends received from associated companies and others		479	444	422
Interest received		35	40	49
Interest paid		(668)	(609)	(594)
Other financial receipts		553	55	214
Other financial payments		(24)	(22)	(22)
Taxes paid[1]		(2,179)	(2,054)	(2,166)
Cash flows before working capital and provision changes from continuing operations		***15,648***	***14,342***	***15,099***
Payments out of provisions and other net cash movements in non-current liabilities		(1,125)	(947)	(1,124)
Change in net current assets and other operating cash flow items	23.2	(625)	(778)	(165)
Cash flows from operating activities from continuing operations		**13,898**	**12,617**	**13,810**
Cash flows used in/from operating activities from discontinuing operations[1]		(1)	557	384
Total cash flows from operating activities		**13,897**	**13,174**	**14,194**
Purchase of property, plant & equipment		(2,624)	(2,903)	(2,458)
Proceeds from sales of property, plant & equipment		60	48	82
Purchase of intangible assets		(780)	(475)	(314)
Proceeds from sales of intangible assets		246	96	117
Purchase of financial assets		(239)	(152)	(166)
Proceeds from sales of financial assets		431	313	220
Purchase of other non-current assets		(60)	(38)	(56)
Proceeds from sales of other non-current assets		2	15	16
Divestments/acquisitions of interests in associated companies		1,370	(52)	
Acquisitions of businesses	23.3	(331)	(42)	(1,741)
Purchase of marketable securities and commodities		(169)	(278)	(1,639)
Proceeds from sales of marketable securities and commodities		2,086	249	516
Cash flows used in investing activities from continuing operations		**(8)**	**(3,219)**	**(5,423)**
Cash flows from/used in investing activities from discontinuing operations[1]	23.4	889	(133)	(252)
Total cash flows from/used in investing activities		**881**	**(3,352)**	**(5,675)**
Dividends paid to shareholders of Novartis AG		(6,810)	(6,100)	(6,030)
Acquisition of treasury shares		(6,915)	(2,930)	(505)
Proceeds from exercise options and other treasury share transactions		2,400	1,693	414
Increase in non-current financial debts		6,024	93	1,979
Repayment of non-current financial debts		(2,599)	(2,022)	(704)
Change in current financial debts		(107)	596	(1,737)
Impact of change in ownership of consolidated entities			4	(6)
Dividends paid to non-controlling interests and other financing cash flows		(140)	(103)	(86)
Cash flows used in financing activities		**(8,147)**	**(8,769)**	**(6,675)**
Net effect of currency translation on cash and cash equivalents		(295)	82	(1)
Net change in cash and cash equivalents		**6,336**	**1,135**	**1,843**
Cash and cash equivalents at January 1		6,687	5,552	3,709
Cash and cash equivalents at December 31		**13,023**	**6,687**	**5,552**

[1] In 2014, total Group tax payments amounted to $2.6 billion when also taking into account payments of $7 million and $459 million, included in the cash flows from operating activities and investing activities, respectively, of discontinuing operations.

The accompanying Notes form an integral part of the consolidated financial statements.

NOTES TO THE NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS

1. Significant Accounting Policies

The Novartis Group (Novartis or Group) is a multinational group of companies specializing in the research, development, manufacturing and marketing of a broad range of healthcare products led by innovative pharmaceuticals. It is headquartered in Basel, Switzerland.

The consolidated financial statements of the Group are prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). They are prepared in accordance with the historical cost convention except for items that are required to be accounted for at fair value.

The Group's financial year-end is December 31 which is also the annual closing date of the individual entities' financial statements incorporated into the Group's consolidated financial statements.

The preparation of financial statements requires management to make certain estimates and assumptions, either at the balance sheet date or during the year that affect the reported amounts of assets and liabilities, including any contingent amounts, as well as of revenues and expenses. Actual outcomes and results could differ from those estimates and assumptions.

Listed below are accounting policies of significance to Novartis or, in cases where IFRS provides alternatives, the option adopted by Novartis.

Scope of Consolidation

The consolidated financial statements include all entities, including structured entities, over which Novartis AG, Basel, Switzerland, directly or indirectly has control (generally as a result of owning more than 50% of the entity's voting interest). Consolidated entities are also referred to as "subsidiaries".

In cases where Novartis does not fully own a subsidiary it has elected to value any remaining outstanding non-controlling interest at the time of acquiring control of the subsidiary at its proportionate share of the fair value of the net identified assets.

Investments in associated companies (generally defined as investments in entities in which Novartis holds between 20% and 50% of voting shares or over which it otherwise has significant influence) and joint ventures are accounted for using the equity method except for selected venture fund investments for which the Group has elected to apply the method of fair value through the consolidated income statement.

Foreign Currencies

The consolidated financial statements of Novartis are presented in US dollars ($). The functional currency of subsidiaries is generally the local currency of the respective entity. The functional currency used for the reporting of certain Swiss and foreign finance entities is $ instead of their respective local currencies. This reflects the fact that the cash flows and transactions of these entities are primarily denominated in these currencies.

For subsidiaries not operating in hyperinflationary economies, the subsidiary's results, financial position and cash flows that do not have $ as their functional currency are translated into $ using the following exchange rates:

– income, expense and cash flows using for each month the average exchange rate with the US dollar values for each month being aggregated during the year.

1. Significant Accounting Policies (Continued)

– balance sheets using year-end exchange rates.

– resulting exchange rate differences are recognized in other comprehensive income.

The only hyperinflationary economy applicable to Novartis is Venezuela. The financial statements of the major subsidiaries in this country are first adjusted for the effect of inflation with any gain or loss on the net monetary position recorded in the related functional lines in the consolidated income statement and then translated into $.

Acquisition of Assets

Acquired assets are initially recognized on the balance sheet at cost if they meet the criteria for capitalization. If acquired as part of a business combination, the fair value of identified assets represents the cost for these assets. If separately acquired, the cost of the asset includes the purchase price and any directly attributable costs for bringing the asset into the condition to operate as intended. Expected costs for obligations to dismantle and remove property, plant and equipment when it is no longer used are included in their cost.

Property, Plant and Equipment

Property, plant and equipment are depreciated on a straight-line basis in the consolidated income statement over their estimated useful lives. Leasehold land is depreciated over the period of its lease whereas freehold land is not depreciated.

Property, plant and equipment are assessed for impairment whenever there is an indication that the balance sheet carrying amount may not be recoverable using cash flow projections for the whole useful life. The related depreciation expense is included in the costs of the functions using the asset.

The following table shows the respective useful lives for property, plant and equipment:

	Useful life
Buildings	20 to 40 years
Machinery and other equipment	
Machinery and equipment	7 to 20 years
Furniture and vehicles	5 to 10 years
Computer hardware	3 to 7 years

Government grants obtained for construction activities, including any related equipment, are deducted from the gross acquisition cost to arrive at the balance sheet carrying value of the related assets.

Goodwill and Intangible Assets

Goodwill

Goodwill arises in a business combination and is the excess of the consideration transferred to acquire a business over the underlying fair value of the net identified assets acquired. It is allocated to cash generating units (CGUs) which are usually represented by the reported segments. Goodwill is tested for impairment annually at the CGU level and any impairment charges are recorded under "Other Expense" in the consolidated income statement.

1. Significant Accounting Policies (Continued)

Intangible Assets Available-for-Use

Novartis has the following classes of available-for-use intangible assets other than goodwill: Currently marketed products; Marketing know-how; Technologies; Other intangible assets (including computer software) and the Alcon brand name.

Currently marketed products represent the composite value of acquired intellectual property, patents, and distribution rights and product trade names.

Marketing know-how represents the value attributable to the expertise acquired for marketing and distributing Alcon surgical equipment.

Technologies represent identified and separable acquired know-how used in the research, development and production processes.

Significant investments in internally developed and acquired computer software are capitalized and included in the "Other" category and amortized once available for use.

The Alcon brand name is shown separately as it is the only Novartis intangible asset that is available for use with an indefinite useful life. Novartis considers that it is appropriate that the Alcon brand name has an indefinite life since Alcon has a history of strong revenue and cash flow performance, and Novartis has the intent and ability to support the brand with spending to maintain its value for the foreseeable future.

Except for the Alcon brand name, intangible assets available for use are amortized over their estimated useful lives on a straight-line basis and evaluated for potential impairment whenever facts and circumstances indicate that their carrying value may not be recoverable. The Alcon brand name is not amortized, but evaluated for potential impairment annually.

The following table shows the respective useful lives for available-for-use intangible assets and the location in the consolidated income statement in which the respective amortization and any potential impairment charge is recognized:

	Useful life	Income statement location for amortization and impairment charges
Currently marketed products	5 to 20 years	"Cost of goods sold"
Marketing know-how	25 years	"Cost of goods sold"
Technologies	10 to 30 years	"Cost of goods sold" or "Research and Development"
Other (including computer software)	3 to 5 years	In the respective functional expense
Alcon brand name	not amortized, indefinite useful life	Not applicable

Intangible Assets Not Yet Available-for-Use

Acquired research and development intangible assets, which are still under development and have accordingly not yet obtained marketing approval, are recognized as In-Process Research & Development (IPR&D). IPR&D assets are only capitalized if they are deemed to enhance the intellectual property of

1. Significant Accounting Policies (Continued)

Novartis and include items such as initial upfront and milestone payments on licensed or acquired compounds.

IPR&D is not amortized, but evaluated for potential impairment on an annual basis or when facts and circumstances warrant. Any impairment charge is recorded in the consolidated income statement under "Research & Development". Once a project included in IPR&D has been successfully developed it is transferred to the "Currently marketed product" category.

Impairment of Goodwill and Intangible Assets

An asset is considered impaired when its balance sheet carrying amount exceeds its estimated recoverable amount, which is defined as the higher of its fair value less costs of disposal and its value in use. Usually, Novartis applies the fair value less costs of disposal method for its impairment assessment. In most cases no directly observable market inputs are available to measure the fair value less costs of disposal. Therefore, an estimate is derived indirectly and is based on net present value techniques utilizing post-tax cash flows and discount rates. In the limited cases where the value in use method is applied, net present value techniques are applied using pre-tax cash flows and discount rates.

Fair value reflects estimates of assumptions that market participants would be expected to use when pricing the asset or CGU, and for this purpose management considers the range of economic conditions that are expected to exist over the remaining useful life of the asset.

The estimates used in calculating the net present values are highly sensitive and depend on assumptions specific to the nature of the Group's activities with regard to:

- amount and timing of projected future cash flows;
- outcome of R&D activities (compound efficacy, results of clinical trials, etc.);
- amount and timing of projected costs to develop IPR&D into commercially viable products;
- probability of obtaining regulatory approval;
- long-term sales forecasts for periods of up to 25 years;
- sales erosion rates after the end of patent protection and timing of the entry of generic competition;
- selected tax rate;
- behavior of competitors (launch of competing products, marketing initiatives, etc.); and
- selected discount rate.

Generally, for intangible assets with a definite useful life Novartis uses cash flow projections for the whole useful life of these assets, and for goodwill and the Alcon brand name, Novartis utilizes cash flow projections for a five-year period based on management forecasts, with a terminal value based on sales projections usually in line with or lower than inflation rates for later periods. Probability-weighted scenarios are typically used.

1. Significant Accounting Policies (Continued)

Discount rates used are based on the Group's estimated weighted average cost of capital adjusted for specific country and currency risks associated with cash flow projections as an approximation of the weighted average cost of capital of a comparable market participant.

Due to the above factors, actual cash flows and values could vary significantly from forecasted future cash flows and related values derived using discounting techniques.

Impairment of Associated Companies Accounted For at Equity

Novartis considers investments in associated companies for impairment evaluation whenever there is a quoted share price indicating a fair value less than the per-share balance sheet carrying value for the investment. For unquoted investments in associated companies recent financial information is taken into account to assess whether an impairment evaluation is necessary.

If the recoverable amount of the investment is estimated to be lower than the balance sheet carrying amount an impairment charge is recognized for the difference in the consolidated income statement under "Income from associated companies".

Cash and Cash equivalents, Marketable Securities, Commodities, Derivative Financial Instruments and Non-Current Financial Assets

Cash and cash equivalents include highly liquid investments with original maturities of three months or less which are readily convertible to known amounts of cash. Bank overdrafts are usually presented within current financial debts on the consolidated balance sheet except in cases where a right of offset has been agreed with a bank which then allows for presentation on a net basis.

The Group defines "marketable securities" as those financial assets which are managed by the Group's Corporate Treasury and consist principally of quoted equity and quoted debt securities as well as fund investments which are principally traded in liquid markets. Certain marketable securities are managed independently of Corporate Treasury, and these are typically held for long-term strategic purposes and are therefore classified as non-current financial assets. They include equity securities and fund investments.

Marketable securities are initially recorded at fair value on their trade date which is different from the settlement date when the transaction is ultimately effected. Quoted securities are re-measured at each reporting date to fair value based on current market prices. If the market for a financial asset is not active or no market is available, fair values are established using valuation techniques. Apart from discounted cash flow analysis and other pricing models, for the majority of investments in what is known as the "Level 3" hierarchy, the valuation is based on the acquisition cost as the best approximation of the fair value of the investee. This is adjusted for a higher or lower valuation in connection with a partial disposal, a new round of financing and for the investee's performance below or above expectations. The fair value of investments in "Level 3" is reviewed regularly for a possible diminution in value.

The Group has classified all its equity and quoted debt securities as well as fund investments as available-for-sale, as they are not acquired to generate profit from short-term fluctuations in price. Unrealized gains, except exchange gains related to quoted debt instruments, are recorded as a fair value adjustment in the consolidated statement of comprehensive income. They are recognized in the consolidated income statement when the financial asset is sold at which time the gain is transferred either to "Other financial income and expense" for the marketable securities managed by the Group's Corporate

1. Significant Accounting Policies (Continued)

Treasury or to "Other income" in the consolidated income statement for all other equity securities and fund investments. Exchange gains related to quoted debt instruments are immediately recognized in the consolidated income statement under "Other financial income and expense".

A security is assessed for impairment when its market value at the balance sheet date is less than initial cost reduced by any previously recognized impairment. Impairments on equity securities, quoted debt securities and fund investments, and exchange rate gains and losses on quoted debt securities in a foreign currency which are managed by the Group's Corporate Treasury are immediately recorded in "Other financial income and expense". Impairments are recorded for all other equity securities and other fund investments in "Other expense" or "Other income" in the consolidated income statement.

Commodities include gold bullion or coins which are valued at the lower of cost or fair value using current market prices. The changes in fair value below cost are immediately recorded in "Other financial income and expense".

Other non-current financial assets including loans are carried at either amortized cost, which reflects the time value of money or cost adjusted for any accrued interest, less any allowances for uncollectable amounts. Impairments and exchange rate gains and losses on other non-current financial assets, including loans, as well as interest income using the effective interest rate method, are immediately recorded in "Other income" or "Other expense" in the consolidated income statement.

Derivative financial instruments are initially recognized in the balance sheet at fair value and are re-measured to their current fair value at the end of each subsequent reporting period. The valuation of a forward exchange rate contract is based on the discounted cash flow model, using interest curves and spot rates at the reporting date as observable inputs.

Options are valued based on a modified Black-Scholes model using volatility and exercise prices as major observable inputs.

The Group utilizes derivative financial instruments for the purpose of hedging to reduce the volatility in the Group's performance due to the exposure to various types of business risks. The Group, therefore, enters into certain derivative financial instruments which provide effective economic hedges. The risk reduction is obtained because the derivative's value or cash flows are expected, wholly or partly, to move inversely to the hedged item and, therefore, offset changes in the value or cash flows of the hedged item. The overall hedging strategy is aiming to mitigate the currency and interest exposure risk of positions which are contractually agreed and to partially hedge the exposure risk of selected anticipated transactions. However, the Group generally does not hedge the translation risk related to its foreign investments.

Not all of the financial impact of derivative financial instruments can be matched with the financial impact of the economically hedged item. A prerequisite for obtaining this accounting hedge relationship is extensive documentation on inception and proving on a regular basis that the economic hedge is effective for accounting purposes. Changes in the fair value of any derivative instruments that do not qualify for cash flow hedge accounting are recognized immediately in "Other financial income and expense" in the consolidated income statement.

1. Significant Accounting Policies (Continued)

Inventories

Inventory is valued at acquisition or production cost determined on a first-in first-out basis. This value is used for the "Cost of goods sold" in the consolidated income statement. Unsalable inventory is fully written off in the consolidated income statement under "Cost of goods sold".

Trade Receivables

Trade receivables are initially recognized at their invoiced amounts including any related sales taxes less adjustments for estimated revenue deductions such as rebates, chargebacks and cash discounts.

Provisions for doubtful trade receivables are established once there is an indication that it is likely that a loss will be incurred. These provisions represent the difference between the trade receivable's carrying amount in the consolidated balance sheet and the estimated net collectible amount. Significant financial difficulties of a customer, such as probability of bankruptcy, financial reorganization, default or delinquency in payments are considered indicators that recovery of the trade receivable is doubtful. Charges for doubtful trade receivables are recognized in the consolidated income statement within "Marketing & Sales" expenses.

Legal and Environmental Liabilities

Novartis and its subsidiaries are subject to contingencies arising in the ordinary course of business such as patent litigation, environmental remediation liabilities and other product-related litigation, commercial litigation, and governmental investigations and proceedings. Provisions are made where a reliable estimate can be made of the probable outcome of legal or other disputes including related fees and expenses against the subsidiary. Novartis believes that its total provisions are adequate based upon currently available information, however, given the inherent difficulties in estimating liabilities in this area, Novartis may incur additional costs beyond the amounts provided. Management believes that such additional amounts, if any, would not be material to the Group's financial condition but could be material to the results of operations or cash flows in a given period.

Contingent Consideration

In a business combination it is necessary to recognize contingent future payments to previous owners representing contractually defined potential amounts as a liability. Usually for Novartis these are linked to milestone or royalty payments related to intangible assets and are recognized as a financial liability at their fair value which is then re-measured at each subsequent reporting date. These estimations typically depend on factors such as technical milestones or market performance and are adjusted for the probability of their likelihood of payment and if material, appropriately discounted to reflect the impact of time. Changes in the fair value of contingent payments in subsequent periods are recognized in the consolidated income statement in "Cost of goods sold" for currently marketed products and in "Research & Development" for IPR&D. The effect of unwinding the discount over time is recognized in "Interest expense" in the consolidated income statement. Novartis does not recognize contingent consideration associated with asset purchases outside of a business combination that are conditional upon future events which are within its control until such time as there is an unconditional obligation. If the contingent consideration is outside the control of Novartis a liability is recognized once it becomes probable that the contingent consideration will become due. In both cases, if appropriate, a corresponding asset is recorded.

1. Significant Accounting Policies (Continued)

Defined Benefit Pension Plans and Other Post-Employment Benefits

The liability in respect of defined benefit pension plans and other post-employment benefits is the defined benefit obligation calculated annually by independent actuaries using the projected unit credit method. The current service cost for such post-employment benefit plans is included in the personnel expenses of the various functions where the associates are employed, while the net interest on the net defined benefit liability or asset is recognized as "Other expense" or "Other income".

Treasury Shares

Treasury shares are initially recorded at fair value on their trade date which is different from the settlement date when the transaction is ultimately effected. Treasury shares are deducted from consolidated equity at their nominal value of CHF 0.50 per share. Differences between the nominal amount and the transaction price on purchases or sales of treasury shares with third parties, or the value of services received for the shares allocated to associates as part of share-based compensation arrangements, are recorded in "Retained earnings" in the consolidated statement of changes in equity.

Revenue Recognition

Revenue

Revenue is recognized on the sale of Novartis Group products and services and recorded as "Net sales" in the consolidated income statement when there is persuasive evidence that a sales arrangement exists, title and risks and rewards for the products are transferred to the customer, the price is determinable and collectability is reasonably assured. When contracts contain customer acceptance provisions, sales are recognized upon the satisfaction of acceptance criteria. If products are stockpiled at the request of the customer, revenue is only recognized once the products have been inspected and accepted by the customer and there is no right of return or replenishment on product expiry and cost of storage will be paid by the customer on normal commercial terms.

Provisions for rebates and discounts granted to government agencies, wholesalers, retail pharmacies, managed care and other customers are recorded as a reduction of revenue at the time the related revenues are recorded or when the incentives are offered. They are calculated on the basis of historical experience and the specific terms in the individual agreements. Provisions for refunds granted to healthcare providers under innovative pay-for-performance agreements are recorded as a reduction of revenue at the time the related sales are recorded. They are calculated on the basis of historical experience and clinical data available for the product as well as the specific terms in the individual agreements. In cases where historical experience and clinical data are not sufficient for a reliable estimation of the outcome, revenue recognition is deferred until such history is available.

Cash discounts are offered to customers to encourage prompt payment and are recorded as revenue deductions. Following a decrease in the price of a product, we generally grant customers a "shelf stock adjustment" for a customer's existing inventory for the involved product. Provisions for shelf stock adjustments, which are primarily relevant within the Sandoz Division, are determined at the time of the price decline or at the point of sale, if the impact of a price decline on the products sold can be reasonably estimated based on the customer's inventory levels of the relevant product. When there is historical experience of Novartis agreeing to customer returns or Novartis can otherwise reasonably estimate expected future returns, a provision is recorded for estimated sales returns. In doing so the estimated rate

1. Significant Accounting Policies (Continued)

of return is applied, determined based on historical experience of customer returns or considering any other relevant factors. This is applied to the amounts invoiced also considering the amount of returned products to be destroyed versus products that can be placed back in inventory for resale. Where shipments are made on a re-sale or return basis, without sufficient historical experience for estimating sales returns, revenue is only recorded when there is evidence of consumption or when the right of return has expired.

Provisions for revenue deductions are adjusted to actual amounts as rebates, discounts and returns are processed. The provision represents estimates of the related obligations, requiring the use of judgment when estimating the effect of these sales deductions.

Revenue from Lease Arrangements

For surgical equipment, in addition to cash and instalment sales, revenue is recognized under finance and operating lease arrangements. An arrangement that is not in the legal form of a lease is accounted for as a lease if it is dependent on the use of a specific asset or assets and the arrangement conveys a right to use the asset. Arrangements in which Novartis transfers substantially all the risks and rewards incidental to ownership to the customer are treated as finance lease arrangements. Revenue from finance lease arrangements is recognized at amounts equal to the fair values of the equipment, which approximate the present values of the minimum lease payments under the arrangements. As interest rates embedded in lease arrangements are approximately market rates, revenue under finance lease arrangements is comparable to revenue for outright sales. Finance income for arrangements in excess of twelve months is deferred and subsequently recognized based on a pattern that approximates the use of the effective interest method and recorded in "Other income". Operating lease revenue for equipment rentals is recognized on a straight-line basis over the lease term.

Other Revenue

Other revenue includes royalty income and revenue from ordinary activities such as manufacturing services or other services rendered to the extent such revenue is not recorded under net sales.

Research & Development

Internal Research & Development (R&D) costs are fully charged to "Research & Development" in the consolidated income statement in the period in which they are incurred. The Group considers that regulatory and other uncertainties inherent in the development of new products preclude the capitalization of internal development expenses as an intangible asset until marketing approval from a regulatory authority is obtained in a major market such as the United States, the European Union, Switzerland or Japan.

Payments made to third parties in compensation for subcontracted R&D, such as contract research and development organizations, that is deemed not to enhance the intellectual property of Novartis are expensed as internal R&D expenses in the period in which they are incurred. Such payments are only capitalized if they meet the criteria for recognition of an internally generated intangible asset, usually when marketing approval has been achieved from a regulatory authority in a major market.

Payments made to third parties in order to in-license or acquire intellectual property rights, compounds and products (IPR&D), including initial upfront and subsequent milestone payments, are capitalized as are payments for other assets, such as technologies to be used in R&D activities. If

1. Significant Accounting Policies (Continued)

additional payments are made to the originator company to continue to perform R&D activities, an evaluation is made as to the nature of the payments. Such additional payments will be expensed if they are deemed to be compensation for subcontracted R&D services not resulting in an additional transfer of intellectual property rights to Novartis. By contrast, such additional payments will be capitalized if they are deemed to be compensation for the transfer to Novartis of additional intellectual property developed at the risk of the originator company. Subsequent internal R&D costs in relation to IPR&D and other assets are expensed since the technical feasibility of the internal R&D activity can only be demonstrated by the receipt of marketing approval for a related product from a regulatory authority in a major market.

Costs for post-approval studies performed to support the continued registration of a marketed product are recognized as marketing expenses. Costs for activities that are required by regulatory authorities as a condition for obtaining marketing approval are charged as development expenses as they are incurred, in cases where it is anticipated that the related product will be sold over a longer period than the activities required to be performed to obtain the marketing approval. In the rare cases when costs related to the conditional approval need to be incurred over a period beyond that of the anticipated product sales, then the expected costs of these activities will be expensed over the shorter period of the anticipated product sales. As a result, all activities necessary as a condition to maintain a received approval, whether conditional or not, are expensed in the consolidated income statement.

IPR&D assets are transferred to "Currently marketed products" once the related project has been successfully developed and then are amortized in the consolidated income statement over their useful life. Other acquired technologies included in intangible assets are amortized in the consolidated income statement over their estimated useful lives.

Inventory produced ahead of regulatory approval is provisioned against and the charge is included in "Other expense" in the consolidated income statement as its ultimate use cannot be assured. If this inventory can be subsequently sold, the provision is released to "Other income" in the consolidated income statement either on approval by the appropriate regulatory authority or, exceptionally in Europe, on recommendation by the Committee for Medicinal Products for Human Use (CHMP) if approval is virtually certain.

Share-Based Compensation

Vested Novartis shares and ADRs which are granted as compensation are valued at their market value on the grant date and are immediately expensed in the consolidated income statement.

The fair values of unvested restricted shares, restricted share units (RSUs) and performance share units (PSUs) in Novartis shares and American Depositary Receipts (ADRs) and related options granted to associates as compensation are recognized as an expense over the related vesting period. The expense recorded in the consolidated income statement is included in the personnel expenses of the various functions where the associates are employed.

Unvested restricted shares, restricted ADRs and RSUs and any related options are only conditional on the provision of services by the plan participant during the vesting period. As a result, restricted shares, restricted ADRs, RSUs and any related options are valued using their market value on the grant date. The value of these grants, after making adjustment for assumptions related to their forfeiture during the vesting period, are expensed on a straight-line basis over the respective vesting period.

1. Significant Accounting Policies (Continued)

PSUs require the plan participant to not only provide services during the vesting period but they are also subject to certain performance criteria being achieved during the vesting period. PSUs granted under plans defined as "Long-Term Performance Plans" are subject to performance criteria based on Novartis internal performance metrics. The expense is determined taking into account assumptions concerning performance during the period against targets and expected forfeitures due to plan participants not meeting their service conditions. These assumptions are periodically adjusted. Any change in estimates for past services is recorded immediately as an expense or income in the consolidated income statement and amounts for future periods are expensed over the remaining vesting period. As a result, at the end of the vesting period, the total charge during the whole vesting period represents the amount which will finally vest. The number of equity instruments that finally vest is determined at the vesting date.

In 2014, a Long-Term Relative Performance Plan (LTRPP) was introduced. PSUs granted under this plan are not only conditional on the provision of services by the plan participant during the vesting period but are also conditional on the Total Shareholder Return (TSR) performance of Novartis relative to a specific peer group of companies over the vesting period. These performance conditions are based on variables which can be observed in the market. IFRS requires that these observations are taken into account in determining the fair value of these PSUs at the date of grant. Novartis has determined the fair value of these PSUs at the date of grant using a "Monte Carlo" simulation model. The total fair value of this grant is expensed on a straight-line basis over the vesting period. Adjustments to the number of equity instruments granted are only made if a plan participant does not fulfill the service conditions.

If a plan participant leaves Novartis, for reasons other than retirement, disability or death, then unvested restricted shares, restricted ADRs, RSUs and related share options and PSUs are forfeited, unless determined otherwise by the provision of the plan rules or by the Compensation Committee, for example, in connection with a reorganization or divestment.

Measuring the fair values of PSUs granted under the LTRPP and share and ADR options granted under other plans, requires an estimation of the probability of uncertain future events and various other factors used in the valuation models. The Monte Carlo simulation used for determining the fair value of the PSUs related to the LTRPP requires as input parameters the probability of factors related to uncertain future events; the term of the award; grant price of underlying shares or ADRs; expected volatilities; expected correlation matrix of the underlying equity instruments with those of the peer group of companies and the risk free interest rate. The fair values of options on Novartis shares and ADRs are calculated using the trinomial valuation method and has as input parameters the expected dividend yield and expected price volatility. Expected volatilities are based on those implied from listed financial instruments on Novartis shares, and—to the extent that equivalent values are not available—a future extrapolation based on historical volatility.

Government Grants

Grants from governments or similar organizations are recognized at their fair value when there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions.

Government grants related to income are deferred and recognized in the consolidated income statement over the period necessary to match them with the related costs which they are intended to compensate.

1. Significant Accounting Policies (Continued)

The accounting policy for property, plant and equipment describes the treatment of any related grants.

Restructuring Charges

Charges to increase restructuring provisions are included in "Other expense" in the consolidated income statements. Corresponding releases are recorded in "Other income" in the consolidated income statement.

Taxes

Taxes on income are provided in the same periods as the revenues and expenses to which they relate and include any interest and penalties incurred during the period. Deferred taxes are determined using the comprehensive liability method and are calculated on the temporary differences that arise between the tax base of an asset or liability and its carrying value in the balance sheet prepared for consolidation purposes, except for those temporary differences related to investments in subsidiaries and associated companies, where the timing of their reversal can be controlled and it is probable that the difference will not reverse in the foreseeable future. Furthermore, withholding or other taxes on eventual distribution of a subsidiary's retained earnings are only taken into account when a dividend has been planned since generally the retained earnings are reinvested.

The estimated amounts for current and deferred tax assets or liabilities, including any amounts related to any uncertain tax positions, are based on currently known facts and circumstances. Tax returns are based on an interpretation of tax laws and regulations and reflect estimates based on these judgments and interpretations. The tax returns are subject to examination by the competent taxing authorities, which may result in an assessment being made requiring payments of additional tax, interest or penalties. Inherent uncertainties exist in the estimates of the tax positions.

Non-Current Assets Held for Sale or Related to Discontinuing Operations

Non-current assets are classified as assets held for sale or related to discontinuing operations when their carrying amount is to be recovered principally through a sale transaction and a sale is considered highly probable. They are stated at the lower of carrying amount and fair value less costs to sell. Assets held for sale or included within a disposal group are not depreciated or amortized.

Status of Adoption of Significant New or Amended IFRS Standards or Interpretations

The adoption of new or amended IFRS standards and interpretations which are effective for the financial year beginning on January 1, 2014 did not have a material impact on the Group's consolidated financial statements. Specifically, the impact of IFRIC 21 *Levies*, which sets out the accounting for an obligation to pay a levy if that liability is within the scope of IAS 37 *Provisions*, was insignificant.

1. Significant Accounting Policies (Continued)

Issued IFRS Standards Not Yet Effective

The following new IFRS standards will, based on a Novartis analysis, be of significance to the Group, but have not yet been early adopted:

- IFRS 9 *Financial Instruments* will substantially change the classification and measurement of financial instruments; will require impairments to be based on a forward-looking model; will change the approach to hedging financial exposures and related documentation and also the recognition of certain fair value changes. The mandatory effective date for requirements issued as part of IFRS 9 is January 1, 2018 with early adoption permitted. The Group is currently assessing the impact of IFRS 9.
- IFRS 15 *Revenue from contracts with customers* amends revenue recognition requirements and establishes principles for reporting information about the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. The standard replaces IAS 18 *Revenue* and IAS 11 *Construction contracts* and related interpretations. The standard is effective for annual periods beginning on or after January 1, 2017 with earlier adoption permitted. The Group is currently assessing the impact of adopting IFRS 15.

There are no other IFRSs or interpretations which are not yet effective which would be expected to have a material impact on the Group.

2. Significant Transactions

Significant Transaction in 2014

Vaccines—Divestment of Blood Transfusion Diagnostics Unit

On January 9, 2014, Novartis completed the divestment of its blood transfusion diagnostics unit announced on November 11, 2013 to the Spanish company Grifols S.A., for $1.7 billion in cash. The pre-tax gain on this transaction was approximately $0.9 billion and was recorded in operating income from discontinuing operations.

Pharmaceuticals—Acquisition of CoStim Pharmaceuticals, Inc.

On February 17, 2014, Novartis acquired all of the outstanding shares of CoStim Pharmaceuticals, Inc., a Cambridge, Massachusetts, US-based, privately held biotechnology company focused on harnessing the immune system to eliminate immune-blocking signals from cancer, for a total purchase consideration of $248 million (excluding cash acquired). This amount consists of an initial cash payment and the net present value of contingent consideration of $153 million due to previous CoStim shareholders, which they are eligible to receive upon the achievement of specified development and commercialization milestones. The purchase price allocation resulted in net identified assets of $152 million (excluding cash acquired) and goodwill of $96 million. Results of operations since the acquisition were not material.

2. Significant Transactions (Continued)

Pharmaceuticals—Divestment of Idenix Pharmaceuticals, Inc. (Idenix) Shareholding

On August 5, 2014, Merck & Co., USA completed a tender offer for Idenix. As a result, Novartis divested its 22% shareholding in Idenix and realized a gain of approximately $0.8 billion which was recorded in income from associated companies.

Corporate—Divestment of LTS Lohmann Therapie-Systeme AG (LTS) Shareholding

On November 5, 2014, Novartis divested its 43% shareholding in LTS and realized a gain of approximately $0.4 billion which was recorded in income from associated companies.

Alcon—Acquisition of WaveTec Vision Systems, Inc. (WaveTec)

On October 16, 2014, Alcon acquired all of the outstanding shares of WaveTec, a privately held company, for $350 million in cash. The purchase price allocation resulted in net identified assets of $180 million and goodwill of $170 million. Results of operations since the acquisition were not material.

Major Pending Transactions

Transaction with Eli Lilly and Company

On April 22, 2014, Novartis entered into an agreement with Eli Lilly and Company, USA (Lilly) to divest its Animal Health business to Lilly for approximately $5.4 billion in cash to be paid on closing. This transaction closed on January 1, 2015 and will result in a pre-tax gain of approximately $4.6 billion.

Transactions with GlaxoSmithKline plc

On April 22, 2014 (and as amended and restated on May 29, 2014), Novartis entered into the following agreements with GlaxoSmithKline plc, Great Britain (GSK). These transactions with GSK are inter-conditional and were approved by GSK shareholders in December 2014. They are still subject to other closing conditions, including regulatory approvals. The transactions are expected to close during the first half of 2015.

Pharmaceuticals—Acquisition of GSK oncology products

Novartis has agreed to acquire GSK's oncology products for an aggregate cash consideration of $16 billion. Up to $1.5 billion of this cash consideration is contingent on certain development milestones. In addition, under the terms of the agreement, Novartis was granted a right of first negotiation over the co-development or commercialization of GSK's current and future oncology R&D pipeline, excluding oncology vaccines. The right of first negotiation is for a period of 12.5 years, from the acquisition closing date.

Vaccines—Divestment

Novartis has agreed to divest its Vaccines business to GSK for up to $7.1 billion plus royalties. The $7.1 billion consists of $5.25 billion to be paid on closing and up to $1.8 billion in future milestone payments. Novartis's Vaccines influenza business is excluded from the GSK Vaccines business acquisition. However, GSK has entered into a future option arrangement with Novartis in relation to the Vaccines influenza business, pursuant to which Novartis may unilaterally require GSK to acquire the entire or

2. Significant Transactions (Continued)

certain parts of its vaccines influenza business for consideration of up to $250 million, (the Influenza Put Option) if the divestment to CSL Limited, Australia (CSL) discussed below is not completed. The option period is 18 months, beginning the earlier of the GSK transaction closing date and October 22, 2015. Novartis paid GSK a fee of $5 million in consideration for the grant of the Influenza Put Option.

Consumer Health—Combination of Novartis OTC with GSK consumer healthcare in a joint venture

Novartis and GSK have agreed to create a combined consumer healthcare business through a joint venture between Novartis OTC and GSK consumer healthcare. Upon completion, Novartis will own a 36.5% share of the joint venture and will have four of eleven seats on the joint venture's Board. Furthermore, Novartis will have customary minority rights and also exit rights at a pre-defined, market-based pricing mechanism. The investment will be accounted for using the equity method of accounting.

Transaction with CSL

On October 26, 2014, Novartis entered into a transaction with CSL to sell its Vaccines influenza business to CSL for $275 million. This transaction is expected to be completed in the second half of 2015, subject to all necessary regulatory approvals.

Entering into the separate divestment agreement with CSL resulted in the vaccines influenza business being a separate cash generating unit within the Vaccines Division, requiring the performance of a separate valuation of the influenza vaccines business net assets. This triggered the recognition of an exceptional impairment charge of approximately $1.1 billion (pre-tax), as the book value of the influenza vaccines business net assets was above the $275 million consideration to be paid by CSL.

Significant Transaction in 2013

There were no significant acquisition or divestment transactions during 2013.

Significant Transaction in 2012

Sandoz—Acquisition of Fougera Pharmaceuticals, Inc.

On July 20, 2012, Sandoz completed the acquisition of 100% of Fougera Pharmaceuticals, Inc., a specialty dermatology generics company based in Melville, New York, for $1.5 billion in cash. Sandoz acquired Fougera for its strong dermatology development and manufacturing expertise. Fougera employed approximately 700 people.

The final purchase price allocation resulted in net identified assets of $0.6 billion (excluding acquired cash) and goodwill of $0.9 billion being recognized.

3. Segmentation of Key Figures 2014, 2013 and 2012

The businesses of Novartis are divided operationally on a worldwide basis into five reporting segments. In addition, we separately report Corporate activities.

Reporting segments are presented in a manner consistent with the internal reporting to the chief operating decision maker which is the Executive Committee of Novartis, except for Consumer Health

3. Segmentation of Key Figures 2014, 2013 and 2012 (Continued)

which aggregates the OTC and Animal Health divisions. The Executive Committee of Novartis is responsible for allocating resources and assessing the performance of the reporting segments.

Following the major pending transactions described in Note 2, Novartis has separated the Group's reported financial data for the current and prior year into "continuing" operations and "discontinuing" operations:

Continuing operations comprise:

– Pharmaceuticals: Innovative patent-protected prescription medicines

– Alcon: Surgical, ophthalmic pharmaceutical and vision care products

– Sandoz: Generic pharmaceuticals

– Corporate activities

Discontinuing operations comprise:

– Vaccines: Preventive human vaccines and the blood transfusion diagnostics unit, which was divested on January 9, 2014, see Note 2. Excluded are certain intellectual property rights and related other revenues of the Vaccines Division which are now reported under Corporate continuing activities.

– Consumer Health: OTC (over-the-counter medicines) and Animal Health. These two divisions are managed separately. However, neither is material enough to the Group to be disclosed separately as a reporting segment.

– Corporate: certain transactional and other expenses related to the portfolio transformation.

Our divisions are supported by Novartis Business Services and the Novartis Institutes for BioMedical Research.

– Novartis Business Services (NBS) was launched in July 2014 with the transfer of over 7,000 associates, and organizational structures are being implemented to start operations in January 2015 as a shared services organization.

– The Novartis Institutes for BioMedical Research (NIBR) was created in 2003, and is headquartered in Cambridge, Massachusetts. NIBR supports the Pharmaceuticals and Alcon divisions research activities.

Except for Consumer Health, our reporting segments are managed separately because they each research, develop, manufacture, distribute, and sell distinct products that require differing marketing strategies.

The reporting segments are as follows:

Pharmaceuticals researches, develops, manufactures, distributes and sells patented prescription medicines and reports results based on the following business franchises: Oncology, Primary Care, consisting of Primary Care medicines and Established Medicines; and Specialty Care, consisting of Ophthalmology, Neuroscience and Integrated Hospital Care.

Alcon researches, discovers, develops, manufactures, distributes and sells eye care products. Alcon is the global leader in eye care with product offerings in Surgical, Ophthalmic Pharmaceuticals and Vision

3. Segmentation of Key Figures 2014, 2013 and 2012 (Continued)

Care. In Surgical, Alcon develops, manufactures, distributes and sells ophthalmic surgical equipment, instruments, disposable products and intraocular lenses. In Ophthalmic Pharmaceuticals, Alcon discovers, develops, manufactures, distributes and sells medicines to treat chronic and acute diseases of the eye, as well as over-the-counter medicines for the eye. In Vision Care, Alcon develops, manufactures, distributes and sells contact lenses and lens care products.

Sandoz develops, manufactures, distributes and sells prescription medicines, as well as pharmaceutical and biotechnological active substances, which are not protected by valid and enforceable third-party patents. Sandoz structures its global business around Retail Generics, Anti-Infectives and Biopharmaceuticals & Oncology Injectables. In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals to third parties. Retail Generics includes the areas of Dermatology, Respiratory and Ophthalmics, as well as specialty franchises in cardiovascular, metabolism, central nervous system, pain, gastrointestinal, and hormonal therapies. In Anti-Infectives, Sandoz supplies generic antibiotics to a broad range of customers, as well as active pharmaceutical ingredients and intermediates to the pharmaceutical industry worldwide. In Biopharmaceuticals, Sandoz develops, manufactures and markets protein- or other biotechnology manufacturing services to other companies. In Oncology Injectables, Sandoz develops, manufactures and markets cytotoxic products for the hospital market.

Vaccines: Following the January 9, 2014 completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., the segment now consists only of Vaccines. Vaccines researches, develops, manufactures, distributes and sells human vaccines worldwide. Prior to the completion of the divestment to Grifols S.A., the division was known as Vaccines and Diagnostics. Diagnostics researched, developed, distributed and sold blood testing products.

Consumer Health consists of two divisions: OTC (over-the-counter medicines) and Animal Health. OTC offers readily available consumer medicines. Animal Health provides veterinary products for farm and companion animals.

Income and expenses relating to Corporate include the costs of the Group headquarters and those of corporate coordination functions in major countries. In addition, Corporate includes other items of income and expense which are not attributable to specific segments such as certain expenses related to post-employment benefits, environmental remediation liabilities, charitable activities, donations and sponsorships.

The accounting policies mentioned above are used in the reporting of segment results. Inter-segmental sales are made at amounts which are considered to approximate arm's length transactions. The Executive Committee of Novartis evaluates segmental performance and allocates resources among the segments based on a number of measures including net sales, operating income and net operating assets. Segment net operating assets consist primarily of property, plant and equipment, intangible assets, inventories and trade and other operating receivables less operating liabilities.

Usually, no allocation of Corporate items is made to the segments. As a result, Corporate assets and liabilities principally consist of net liquidity (cash and cash equivalents, marketable securities less financial debts), investments in associated companies and current and deferred taxes and non-segment specific environmental remediation and post-employment benefit liabilities.

3. Segmentation of Key Figures 2014, 2013 and 2012 (Continued)

SEGMENTATION—CONSOLIDATED INCOME STATEMENTS 2014 AND 2013

	Pharmaceuticals		Alcon		Sandoz		Corporate		Total continuing operations		Total discontinuing operations		Group eliminations		Total Group	
(In $ m)	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**
Net sales to third parties	**31,791**	**32,214**	**10,827**	**10,496**	**9,562**	**9,159**			**52,180**	**51,869**	**5,816**	**6,051**			**57,996**	**57,920**
Sales to other segments	262	202	49	50	286	294	(358)	(325)	239	221	78	72	(317)	(293)		
Net sales	**32,053**	**32,416**	**10,876**	**10,546**	**9,848**	**9,453**	**(358)**	**(325)**	**52,419**	**52,090**	**5,894**	**6,123**	**(317)**	**(293)**	**57,996**	**57,920**
Other revenues	629	497	34	27	12	18	540	84	1,215	626	65	285			1,280	911
Cost of goods sold	(6,889)	(6,655)	(5,193)	(4,900)	(5,751)	(5,476)	488	452	(17,345)	(16,579)	(3,073)	(3,322)	317	293	(20,101)	(19,608)
Gross profit	**25,793**	**26,258**	**5,717**	**5,673**	**4,109**	**3,995**	**670**	**211**	**36,289**	**36,137**	**2,886**	**3,086**	**0**	**0**	**39,175**	**39,223**
Marketing & Sales	(8,178)	(8,514)	(2,474)	(2,452)	(1,725)	(1,672)			(12,377)	(12,638)	(1,812)	(1,911)			(14,189)	(14,549)
Research & Development	(7,331)	(7,242)	(928)	(1,042)	(827)	(787)			(9,086)	(9,071)	(857)	(781)			(9,943)	(9,852)
General & Administration	(1,009)	(1,051)	(613)	(589)	(376)	(374)	(618)	(589)	(2,616)	(2,603)	(431)	(457)			(3,047)	(3,060)
Other income	734	699	79	79	97	106	481	321	1,391	1,205	1,007	174	(18)	(12)	2,380	1,367
Other expense	(1,538)	(774)	(184)	(437)	(190)	(240)	(600)	(596)	(2,512)	(2,047)	(1,146)	(184)	18	12	(3,640)	(2,219)
Operating income	**8,471**	**9,376**	**1,597**	**1,232**	**1,088**	**1,028**	**(67)**	**(653)**	**11,089**	**10,983**	**(353)**	**(73)**	**0**	**0**	**10,736**	**10,910**
Income from associated companies	812				4	2	1,102	597	1,918	599	2	1			1,920	600
Interest expense									(704)	(683)					(704)	(683)
Other financial income and expense									(31)	(92)					(31)	(92)
Income before taxes									**12,272**	**10,807**	**(351)**	**(72)**			**11,921**	**10,735**
Taxes									(1,545)	(1,498)	(96)	55			(1,641)	(1,443)
Net income									**10,727**	**9,309**	**(447)**	**(17)**			**10,280**	**9,292**
Attributable to:																
Shareholders of Novartis AG									*10,654*	*9,189*	*(444)*	*(14)*			*10,210*	*9,175*
Non-controlling interests									*73*	*120*	*(3)*	*(3)*			*70*	*117*
Included in net income[1] are:																
Interest income									33	34					33	34
Depreciation of property, plant & equipment	(856)	(822)	(307)	(319)	(317)	(307)	(106)	(106)	(1,586)	(1,554)	(66)	(201)			(1,652)	(1,755)
Amortization of intangible assets	(287)	(284)	(2,080)	(1,999)	(403)	(411)	(5)	(4)	(2,775)	(2,698)	(77)	(278)			(2,852)	(2,976)
Impairment charges on property, plant & equipment, net	(15)	(29)	1	(4)	(7)	3	(23)	(17)	(44)	(47)	(736)	(33)			(780)	(80)
Impairment charges on intangible assets, net	(231)	(29)	(7)	(57)	(39)	(20)			(277)	(106)	(405)	(8)			(682)	(114)
Impairment charges/fair value gains on financial assets	(20)	(16)			(1)		(48)	(41)	(69)	(57)		(8)			(69)	(65)
Additions to restructuring provisions	(433)	(88)	(64)	(71)	(4)	(3)	(3)	(1)	(504)	(163)	(14)	(12)			(518)	(175)
Equity-based compensation of Novartis and Alcon equity plans	(685)	(610)	(92)	(105)	(51)	(38)	(179)	(139)	(1,007)	(892)	(124)	(95)			(1,131)	(987)

[1] Income statement items reflect the continuing/discontinuing operations allocation as described on pages F-23 to F-25.

3. Segmentation of Key Figures 2014, 2013 and 2012 (Continued)

SEGMENTATION—CONSOLIDATED INCOME STATEMENTS 2013 AND 2012

(In $ m)	Pharmaceuticals		Alcon		Sandoz		Corporate		Total continuing operations		Total discontinuing operations		Group eliminations		Total Group	
	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012
Net sales to third parties	**32,214**	**32,153**	**10,496**	**10,225**	**9,159**	**8,702**			**51,869**	**51,080**	**6,051**	**5,593**			**57,920**	**56,673**
Sales to other segments	202	277	50	56	294	279	(325)	(362)	221	250	72	62	(293)	(312)		
Net sales	**32,416**	**32,430**	**10,546**	**10,281**	**9,453**	**8,981**	**(325)**	**(362)**	**52,090**	**51,330**	**6,123**	**5,655**	**(293)**	**(312)**	**57,920**	**56,673**
Other revenues	497	471	27	53	18	12	84	105	626	641	285	247			911	888
Cost of goods sold	(6,655)	(6,578)	(4,900)	(4,618)	(5,476)	(5,126)	452	456	(16,579)	(15,866)	(3,322)	(3,202)	293	312	(19,608)	(18,756)
Gross profit	**26,258**	**26,323**	**5,673**	**5,716**	**3,995**	**3,867**	**211**	**199**	**36,137**	**36,105**	**3,086**	**2,700**	**0**	**0**	**39,223**	**38,805**
Marketing & Sales	(8,514)	(8,568)	(2,452)	(2,462)	(1,672)	(1,561)		4	(12,638)	(12,587)	(1,911)	(1,766)			(14,549)	(14,353)
Research & Development	(7,242)	(6,918)	(1,042)	(975)	(787)	(695)			(9,071)	(8,588)	(781)	(744)			(9,852)	(9,332)
General & Administration	(1,051)	(1,061)	(589)	(510)	(374)	(350)	(589)	(609)	(2,603)	(2,530)	(457)	(407)			(3,060)	(2,937)
Other income	699	577	79	49	106	74	321	243	1,205	943	174	126	(12)	(20)	1,367	1,049
Other expense	(774)	(755)	(437)	(353)	(240)	(244)	(596)	(484)	(2,047)	(1,836)	(184)	(223)	12	20	(2,219)	(2,039)
Operating income	**9,376**	**9,598**	**1,232**	**1,465**	**1,028**	**1,091**	**(653)**	**(647)**	**10,983**	**11,507**	**(73)**	**(314)**	**0**	**0**	**10,910**	**11,193**
Income from associated companies		(2)		16	2	5	597	530	599	549	1	3			600	552
Interest expense									(683)	(724)					(683)	(724)
Other financial income and expense									(92)	(96)					(92)	(96)
Income before taxes									**10,807**	**11,236**	**(72)**	**(311)**			**10,735**	**10,925**
Taxes									(1,498)	(1,706)	55	164			(1,443)	(1,542)
Net income									**9,309**	**9,530**	**(17)**	**(147)**			**9,292**	**9,383**
Attributable to:																
Shareholders of Novartis AG									*9,189*	*9,415*	*(14)*	*(145)*			*9,175*	*9,270*
Non-controlling interests									*120*	*115*	*(3)*	*(2)*			*117*	*113*
Included in net income[1] are:																
Interest income									34	50					34	50
Depreciation of property, plant & equipment	(822)	(825)	(319)	(305)	(307)	(287)	(106)	(100)	(1,554)	(1,517)	(201)	(187)			(1,755)	(1,704)
Amortization of intangible assets	(284)	(324)	(1,999)	(1,926)	(411)	(368)	(4)	(5)	(2,698)	(2,623)	(278)	(271)			(2,976)	(2,894)
Impairment charges on property, plant & equipment, net	(29)	(25)	(4)		3	(3)	(17)	(4)	(47)	(32)	(33)	(7)			(80)	(39)
Impairment charges on intangible assets, net	(29)	(211)	(57)	(17)	(20)	(43)		1	(106)	(270)	(8)	(13)			(114)	(283)
Impairment charges on financial assets	(16)	(2)					(41)	(31)	(57)	(33)	(8)	(1)			(65)	(34)
Additions to restructuring provisions	(88)	(190)	(71)	(23)	(3)	(28)	(1)	(9)	(163)	(250)	(12)	(31)			(175)	(281)
Equity-based compensation of Novartis and Alcon equity plans	(610)	(641)	(105)	(113)	(38)	(41)	(139)	(126)	(892)	(921)	(95)	(82)			(987)	(1,003)

[1] Income statement items reflect the continuing/discontinuing operations allocation as described on pages F-23 to F-25.

3. Segmentation of Key Figures 2014, 2013 and 2012 (Continued)

SEGMENTATION—CONSOLIDATED BALANCE SHEETS 2014 AND 2013

	Pharmaceuticals		Alcon		Sandoz		Vaccines		Consumer Health		Corporate (including eliminations)		Total Group	
(In $ m)	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**
Assets related to continuing operations	25,657	26,633	42,494	43,761	18,771	20,144		4,724		2,634	31,664	27,599	118,586	125,495
Assets related to discontinuing operations							3,710	759	2,684		407		6,801	759
Total assets	**25,657**	**26,633**	**42,494**	**43,761**	**18,771**	**20,144**	**3,710**	**5,483**	**2,684**	**2,634**	**32,071**	**27,599**	**125,387**	**126,254**
Liabilities related to continuing operations	(10,532)	(11,209)	(2,709)	(2,659)	(3,449)	(3,275)		(730)		(957)	(35,435)	(32,902)	(52,125)	(51,732)
Liabilities related to discontinuing operations							(715)	(50)	(922)		(781)		(2,418)	(50)
Total liabilities	**(10,532)**	**(11,209)**	**(2,709)**	**(2,659)**	**(3,449)**	**(3,275)**	**(715)**	**(780)**	**(922)**	**(957)**	**(36,216)**	**(32,902)**	**(54,543)**	**(51,782)**
Total equity	**15,125**	**15,424**	**39,785**	**41,102**	**15,322**	**16,869**	**2,995**	**4,703**	**1,762**	**1,677**	**(4,145)**	**(5,303)**	**70,844**	**74,472**
Net debt											6,549	8,796	6,549	8,796
Net operating assets	**15,125**	**15,424**	**39,785**	**41,102**	**15,322**	**16,869**	**2,995**	**4,703**	**1,762**	**1,677**	**2,404**	**3,493**	**77,393**	**83,268**
Included in assets and liabilities related to continuing operations[1] are:														
Total property, plant & equipment	9,732	9,647	2,413	2,396	3,123	3,304		1,608		453	715	789	15,983	18,197
Additions to property, plant & equipment[2]	1,676	1,755	517	523	531	500		106		79	180	190	2,904	3,153
Total goodwill and intangible assets	6,096	6,099	35,642	37,133	11,378	12,640		2,534		786	27	(325)	53,143	58,867
Additions to goodwill and intangible assets[2]	493	299	192	191	110	31		1		31	4	17	799	570
Total investment in associated companies	11	2			16	19		1			8,405	9,203	8,432	9,225
Additions to investment in associated companies	9	1									21	54	30	55
Cash and cash equivalents, marketable securities, commodities, time deposits and derivative financial instruments											13,862	9,222	13,862	9,222
Financial debts and derivative financial instruments											20,411	18,018	20,411	18,018
Current income tax and deferred tax liabilities											8,175	9,363	8,175	9,363

(1) Items reflect the allocation to continuing operations as described on pages F-23 to F-25. 2013 balance sheet movements only excludes the divested blood transfusion diagnostics unit.

(2) Excluding impact of business combinations.

3. Segmentation of Key Figures 2014, 2013 and 2012 (Continued)

The following countries accounted for more than 5% of at least one of the respective continuing operations totals for the years ended December 31, 2014, 2013 and 2012:

	Net sales[1]						Total of selected non-current assets[2]			
Country	**2014**	**%**	**2013**	**%**	**2012**	**%**	**2014**	**%**	**2013**	**%**
$ m										
Switzerland	658	1	625	1	603	1	34,399	44	37,337	43
United States	17,337	33	17,257	33	17,195	34	28,329	37	30,391	35
Germany	3,742	7	3,628	7	3,337	7	3,365	4	4,323	5
Japan	3,781	7	4,412	9	5,247	10	141		150	
France	2,638	5	2,779	5	2,522	5	228		309	
Other	24,024	47	23,168	45	22,176	43	11,096	15	13,779	17
Group	**52,180**	**100**	**51,869**	**100**	**51,080**	**100**	**77,558**	**100**	**86,289**	**100**
Europe	18,690	36	18,421	36	17,174	34	45,040	58	50,582	59
Americas	22,218	43	21,984	42	22,023	43	30,074	39	33,391	39
Asia/Africa/Australasia	11,272	21	11,464	22	11,883	23	2,444	3	2,316	2
Group	**52,180**	**100**	**51,869**	**100**	**51,080**	**100**	**77,558**	**100**	**86,289**	**100**

(1) Net sales from operations by location of third party customer.

(2) Total of property, plant and equipment, goodwill, intangible assets and investment in associated companies

The Group's largest customer accounts for approximately 15% of net sales, and the second and third largest customers account for 13% and 6% of net sales (2013: 10%, 9% and 7%; 2012: 10%, 9% and 8% respectively). No other customer accounted for 5% or more of net sales, in either year.

The highest amounts of trade receivables outstanding were for these same three customers. They amounted to 11%, 8% and 4%, respectively, of the trade receivables at December 31, 2014 (2013: 9%, 7% and 5%; 2012: 8%, 7% and 6% respectively).

3. Segmentation of Key Figures 2014, 2013 and 2012 (Continued)

Pharmaceuticals Business Franchise Net Sales

Business Franchise	2014	2013	Change (2013 to 2014)	2012	Change (2012 to 2013)
	$ m	$ m	$ %	$ m	$ %
Primary Care					
Onbrez Breezhaler/Arcapta Neohaler	220	192	15	134	43
Seebri Breezhaler	146	58	152	3	nm
Ultibro Breezhaler	118	6	nm		nm
Subtotal COPD[1] portfolio	**484**	**256**	**89**	**137**	**87**
Galvus	1,224	1,200	2	910	32
Xolair[2]	777	613	27	504	22
TOBI	281	387	(27)	317	22
Other	46	40	15	39	3
Total strategic franchise products	**2,812**	**2,496**	**13**	**1,907**	**31**
Diovan	2,345	3,524	(33)	4,417	(20)
Exforge	1,396	1,456	(4)	1,352	8
Tekturna/Rasilez	207	290	(29)	383	(24)
Other	1,201	1,312	(8)	1,492	(12)
Total Established medicines	**5,149**	**6,582**	**(22)**	**7,644**	**(14)**
Total Primary Care products	**7,961**	**9,078**	**(12)**	**9,551**	**(5)**
Oncology					
Gleevec/Glivec	4,746	4,693	1	4,675	0
Tasigna	1,529	1,266	21	998	27
Subtotal Bcr-Abl franchise	**6,275**	**5,959**	**5**	**5,673**	**5**
Sandostatin	1,650	1,589	4	1,512	5
Afinitor/Votubia	1,575	1,309	20	797	64
Exjade	926	893	4	870	3
Femara	380	384	(1)	438	(12)
Jakavi	279	163	71	30	nm
Zometa	264	600	(56)	1,288	(53)
Proleukin	74	91	(19)	59	54
Zykadia	31	0	nm		nm
Other	249	228	9	257	(11)
Total Oncology products	**11,703**	**11,216**	**4**	**10,924**	**3**
Specialty—Neuroscience					
Gilenya	2,477	1,934	28	1,195	62
Exelon/Exelon Patch	1,009	1,032	(2)	1,050	(2)
Comtan/Stalevo	371	401	(7)	530	(24)
Extavia	177	159	11	159	0
Other	66	78	(15)	62	26
Total strategic franchise products	**4,100**	**3,604**	**14**	**2,996**	**20**
Established medicines	409	444	(8)	483	(8)
Total Neuroscience products	**4,509**	**4,048**	**11**	**3,479**	**16**

nm = not meaningful

(1) Chronic Obstructive Pulmonary Disease

(2) Net sales reflect *Xolair* sales for all indications (ie. *Xolair* SAA and *Xolair* CSU, which are managed by the Integrated Hospital Care franchise).

3. Segmentation of Key Figures 2014, 2013 and 2012 (Continued)

Pharmaceuticals Business Franchise Net Sales (Continued)

Business Franchise	2014	2013	Change (2013 to 2014)	2012	Change (2012 to 2013)
	$ m	$ m	%	$ m	%
Specialty—Ophthalmics					
Lucentis	2,441	2,383	2	2,398	(1)
Other	63	61	3	88	(31)
Total Ophthalmics products	**2,504**	**2,444**	**2**	**2,486**	**(2)**
Specialty—Integrated Hospital Care (IHC)					
Neoral/Sandimmun	684	750	(9)	821	(9)
Myfortic	543	637	(15)	579	10
Zortress/Certican	327	249	31	210	19
Ilaris	199	119	67	72	65
Other	173	169	2	166	2
Total strategic franchise products	**1,926**	**1,924**	**0**	**1,848**	**4**
Everolimus stent drug	205	247	(17)	256	(4)
Established medicines	981	1,112	(12)	1,393	(20)
Total IHC products	**3,112**	**3,283**	**(5)**	**3,497**	**(6)**
Established medicines—additional products					
Voltaren (excl. other divisions)	632	675	(6)	759	(11)
Ritalin/Focalin	492	594	(17)	554	7
Tegretol	346	342	1	348	(2)
Trileptal	265	257	3	279	(8)
Foradil	175	205	(15)	240	(15)
Other	92	72	28	36	100
Total additional products	**2,002**	**2,145**	**(7)**	**2,216**	**(3)**
Total strategic franchise products	**23,045**	**21,684**	**6**	**20,161**	**8**
Total established medicines and additional products	8,746	10,530	(17)	11,992	(12)
Total Division net sales	**31,791**	**32,214**	**(1)**	**32,153**	**0**

The product portfolio of other segments is widely spread in 2014, 2013 and 2012.

4. Associated Companies

Novartis has a significant investment in Roche Holding AG, Basel (Roche) and certain other smaller investments which are accounted for as associated companies:

	Balance sheet value	
	2014	2013
	$ m	$ m
Roche Holding AG, Switzerland	8,159	8,982
Others	273	243
Total	**8,432**	**9,225**

	Net income statement effect			Other comprehensive income effect			Total comprehensive income effect		
	2014	2013	2012	2014	2013	2012	2014	2013	2012
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Roche Holding AG, Switzerland	599	604	538	(51)	(37)	(152)	548	567	386
Idenix Pharmaceuticals, Inc., US	812						812		
LTS Lohmann Therapie-Systeme AG, Germany	436	31	34		(6)	(5)	436	25	29
Others	71	(36)	(23)	20	11	3	91	(25)	(20)
Associated companies related to continuing operations	**1,918**	**599**	**549**	**(31)**	**(32)**	**(154)**	**1,887**	**567**	**395**
Associated companies related to discontinuing operations	2	1	3				2	1	3
Total Group	**1,920**	**600**	**552**	**(31)**	**(32)**	**(154)**	**1,889**	**568**	**398**

Roche Holding AG

The Group's holding in Roche voting shares was 33.3% at December 31, 2014, 2013 and 2012. This investment represents approximately 6.3% of Roche's total outstanding voting and non-voting equity instruments at December 31, 2014 (2013: 6.3%, and 2012: 6.4%).

Since up-to-date financial data for Roche are not available when Novartis produces its consolidated financial results, a survey of analyst estimates is used to estimate the Group's share of Roche's net income. Any differences between these estimates and actual results will be adjusted in the Group's 2015 consolidated financial statements when available.

4. Associated Companies (Continued)

The following tables show summarized financial information of Roche, including current values of fair value adjustments made at the time of the acquisition of the shares, for the year ended December 31, 2013 and for the six months ended June 30, 2014 since full year 2014 data is not yet available:

	Current assets	Non-current assets	Current liabilities	Non-current liabilities
	CHF billions	CHF billions	CHF billions	CHF billions
December 31, 2013	29.2	54.9	15.8	25.2
June 30, 2014	28.0	54.5	17.9	24.6

	Revenue	Net income	Other comprehensive income	Total comprehensive income
	CHF billions	CHF billions	CHF billions	CHF billions
December 31, 2013	46.8	8.5	(0.6)	7.9
June 30, 2014	23.0	4.2	(0.6)	3.6

A purchase price allocation was performed on the basis of publicly available information at the time of acquisition of the investment. The December 31, 2014 balance sheet value allocation is as follows:

	$ m
Novartis share of Roche's estimated net assets	2,461
Novartis share of re-appraised intangible assets	1,226
Implicit Novartis goodwill	2,877
Current value of share in net identifiable assets and goodwill	**6,564**
Accumulated equity accounting adjustments and translation effects less dividends received	1,595
December 31, 2014 balance sheet value	**8,159**

The identified intangible assets principally relate to the value of currently marketed products and are amortized on a straight-line basis over their estimated average useful life of 20 years.

In 2014, dividends received from Roche in relation to the distribution of its 2013 net income amounted to $473 million (2013: $413 million in relation with the distribution of its 2012 net income).

4. Associated Companies (Continued)

The consolidated income statement effects from applying Novartis accounting principles for this investment in 2014, 2013 and 2012 are as follows:

	2014	2013	2012
	$ m	$ m	$ m
Novartis share of Roche's estimated current-year consolidated net income	813	817	709
Prior-year adjustment	(56)	(59)	(18)
Amortization of fair value adjustments relating to intangible assets, net of taxes of $45 million (2013: $45 million, 2012: $45 million)	(158)	(154)	(153)
Net income effect	**599**	**604**	**538**

The publicly quoted market value of the Novartis interest in Roche (Reuters symbol: RO.S) at December 31, 2014, was $14.4 billion (2013: $14.8 billion).

Other Associated Companies

During 2014, the shareholdings of 22% in Idenix Pharmaceuticals, Inc. and 43% in LTS Lohmann Therapie-Systeme AG were sold realizing gains of $812 million and $421 million, respectively. Others include a gain of $64 million recorded on investments in associated companies held by the Novartis Venture Funds, which are accounted at fair value from January 1, 2014 onwards, consistent with other investments held by these Funds.

5. Interest Expense and Other Financial Income and Expense

Interest Expense

	2014	2013	2012
	$ m	$ m	$ m
Interest expense	(701)	(664)	(655)
Expense due to discounting long-term liabilities	(3)	(19)	(69)
Total interest expense	**(704)**	**(683)**	**(724)**

5. Interest Expense and Other Financial Income and Expense (Continued)

Other Financial Income and Expense

	2014	2013	2012
	$ m	$ m	$ m
Interest income	33	34	50
Dividend income	1	1	1
Net capital (losses)/gains on available-for-sale securities	(2)	28	(6)
Net capital (losses)/gains on cash and cash equivalents		(1)	47
Income on forward contracts and options	1	2	86
Expenses on forward contracts and options			(129)
Impairment of commodities and available-for-sale securities		(14)	
Other financial expense	(25)	(20)	(20)
Monetary loss from hyperinflation accounting	(61)	(32)	(19)
Currency result, net	22	(90)	(106)
Total other financial income and expense	**(31)**	**(92)**	**(96)**

6. Taxes

Income Before Taxes

	2014	2013	2012
	$ m	$ m	$ m
Switzerland	5,245	5,435	5,038
Foreign	7,027	5,372	6,198
Total income before taxes from continuing operations	**12,272**	**10,807**	**11,236**
Total loss before taxes from discontinuing operations	(351)	(72)	(311)
Group income before taxes	**11,921**	**10,735**	**10,925**

6. Taxes (Continued)

Current and Deferred Income Tax Expense

	2014	2013	2012
	$ m	$ m	$ m
Switzerland	(661)	(524)	(550)
Foreign	(1,952)	(1,793)	(1,914)
Total current income tax expense from continuing operations	**(2,613)**	**(2,317)**	**(2,464)**
Switzerland	309	160	266
Foreign	759	659	492
Total deferred tax income from continuing operations	**1,068**	**819**	**758**
Total income tax expense from continuing operations	**(1,545)**	**(1,498)**	**(1,706)**
Total income tax (expense)/income from discontinuing operations	(96)	55	164
Group income tax expense	**(1,641)**	**(1,443)**	**(1,542)**

Analysis of Tax Rate

The main elements contributing to the difference between the Group's overall expected tax rate (which can change each year since it is calculated as the weighted average tax rate based on pre-tax income of each subsidiary) and the effective tax rate are:

	2014	2013	2012
	%	%	%
Expected tax rate	11.7	12.9	14.4
Effect of disallowed expenditures	2.9	3.4	2.8
Effect of utilization of tax losses brought forward from prior periods	(0.3)	(0.1)	(0.1)
Effect of income taxed at reduced rates	(0.6)	(0.1)	(0.3)
Effect of tax credits and allowances	(1.8)	(2.0)	(1.7)
Effect of write-off of deferred tax assets		0.1	
Effect of tax rate change on opening balance		(0.2)	(0.1)
Effect of tax benefits expiring in 2017	(0.8)	(0.7)	(0.8)
Effect of reversal of write-down of investments in subsidiaries	0.9		
Prior year and other items	0.6	0.6	1.0
Effective tax rate for continuing operations	**12.6**	**13.9**	**15.2**
Effective tax rate for discontinuing operations	(27.4)	76.4	52.8
Group effective tax rate	**13.8**	**13.4**	**14.1**

The utilization of tax-loss carry-forwards lowered the tax charge by $34 million, $13 million and $11 million in 2014, 2013 and 2012, respectively.

7. Earnings per Share

Basic earnings per share (EPS) is calculated by dividing net income attributable to shareholders of Novartis AG by the weighted average number of shares outstanding in a reporting period. This calculation excludes the average number of issued shares purchased by the Group and held as treasury shares.

	2014	2013	2012
Basic earnings per share			
Weighted average number of shares outstanding (in millions)	2,426	2,441	2,418
Net income attributable to shareholders of Novartis AG ($ m)			
—Continuing operations	10,654	9,189	9,415
—Discontinuing operations	(444)	(14)	(145)
—Total	**10,210**	**9,175**	**9,270**
Basic earnings per share ($)			
—Continuing operations	4.39	3.76	3.89
—Discontinuing operations	(0.18)	0.00	(0.06)
—Total	**4.21**	**3.76**	**3.83**

For diluted EPS, the weighted average number of shares outstanding is adjusted to assume the vesting of all restricted shares and the conversion of all potentially dilutive shares arising from options on Novartis shares that have been issued.

	2014	2013	2012
Diluted earnings per share			
Weighted average number of shares outstanding (in millions)	2,426	2,441	2,418
Adjustment for vesting of restricted shares and dilutive shares from options (in millions)	44	38	27
Weighted average number of shares for diluted earnings per share (in millions)	2,470	2,479	2,445
Net income attributable to shareholders of Novartis AG ($ m)			
—Continuing operations	10,654	9,189	9,415
—Discontinuing operations	(444)	(14)	(145)
—Total	**10,210**	**9,175**	**9,270**
Diluted earnings per share ($)			
—Continuing operations	4.31	3.70	3.85
—Discontinuing operations	(0.18)	0.00	(0.06)
—Total	**4.13**	**3.70**	**3.79**

No options were excluded from the calculation of diluted EPS in 2013 or 2014, as all options were dilutive in both years (2012: options equivalent to 77.2 million shares).

8. Changes in Consolidated Statements of Comprehensive Income

The consolidated statements of comprehensive income include the Group's net income for the year as well as all other valuation adjustments recorded in the Group's consolidated balance sheet but which under IFRS are not recorded in the consolidated income statement. These include fair value adjustments to financial instruments, actuarial gains or losses on defined benefit pension and other post-employment plans and currency translation effects, net of tax.

These amounts are subject to significant volatility outside of the control of management due to such factors as share price, foreign currency and interest rate movements.

The following table summarizes these value adjustments and currency translation effects attributable to Novartis shareholders:

	Fair value adjustments on marketable securities	Fair value adjustments on deferred cash flow hedges	Actuarial losses from defined benefit plans	Cumulative currency translation effects	Total value adjustments
	$ m	$ m	$ m	$ m	$ m
Fair value adjustments at January 1, 2012	**137**	**(141)**	**(4,467)**	**3,135**	**(1,336)**
Fair value adjustments on financial instruments	75	41			116
Net actuarial losses from defined benefit plans[1]			(1,581)		(1,581)
Currency translation effects[2]				809	809
Total fair value adjustments in 2012	**75**	**41**	**(1,581)**	**809**	**(656)**
Fair value adjustments at December 31, 2012	**212**	**(100)**	**(6,048)**	**3,944**	**(1,992)**
Fair value adjustments on financial instruments	132	41			173
Net actuarial gains from defined benefit plans[1]			1,504		1,504
Currency translation effects[2]				681	681
Total fair value adjustments in 2013	**132**	**41**	**1,504**	**681**	**2,358**
Fair value adjustments at December 31, 2013	**344**	**(59)**	**(4,544)**	**4,625**	**366**
Fair value adjustments on financial instruments	89	21			110
Net actuarial losses from defined benefit plans[1]			(822)		(822)
Currency translation effects[2]				(2,219)	(2,219)
Total value adjustments in 2014	**89**	**21**	**(822)**	**(2,219)**	**(2,931)**
Value adjustments at December 31, 2014	**433**	**(38)**	**(5,366)**	**2,406**	**(2,565)**

(1) Net actuarial losses of $65 million are attributable to discontinuing operations (2013: net actuarial gains of $39 million, 2012: net actuarial losses of $71 million).

(2) $37 million accumulated currency translation losses are attributable to discontinuing operations (2013: gains of $1 million, 2012: gains of $12 million).

8. Changes in Consolidated Statements of Comprehensive Income (Continued)

8.1) The 2014, 2013 and 2012 changes in the fair value of financial instruments were as follows:

	Fair value adjustments on marketable securities	Fair value adjustments on deferred cash flow hedges	Total
	$ m	$ m	$ m
Fair value adjustments at January 1, 2014	**344**	**(59)**	**285**
Changes in fair value:			
—Available-for-sale marketable securities	(3)		(3)
—Available-for-sale financial investments	91		91
—Associated companies' movements in comprehensive income	5		5
Realized net gains transferred to the consolidated income statement:			
—Marketable securities sold	(4)		(4)
—Other financial assets sold	(81)		(81)
Amortized net losses on cash flow hedges transferred to the consolidated income statement		23	23
Impaired financial assets transferred to the consolidated income statement	87		87
Deferred tax on above items	(6)	(2)	(8)
Fair value adjustments during the year	**89**	**21**	**110**
Fair value adjustments at December 31, 2014	**433**	**(38)**	**395**

8. Changes in Consolidated Statements of Comprehensive Income (Continued)

	Fair value adjustments on marketable securities	Fair value adjustments on deferred cash flow hedges	Total
	$ m	$ m	$ m
Fair value adjustments at January 1, 2013	**212**	**(100)**	**112**
Changes in fair value:			
—Available-for-sale marketable securities	3		3
—Available-for-sale financial investments	204		204
—Associated companies' movements in comprehensive income	7		7
Realized net gains transferred to the consolidated income statement:			
—Marketable securities sold	(46)		(46)
—Other financial assets sold	(74)		(74)
Amortized net losses on cash flow hedges transferred to the consolidated income statement		44	44
Impaired financial assets transferred to the consolidated income statement	65		65
Deferred tax on above items	(27)	(3)	(30)
Fair value adjustments during the year	**132**	**41**	**173**
Fair value adjustments at December 31, 2013	**344**	**(59)**	**285**

8. Changes in Consolidated Statements of Comprehensive Income (Continued)

	Fair value adjustments on marketable securities	Fair value adjustments on deferred cash flow hedges	Total
	$ m	$ m	$ m
Fair value adjustments at January 1, 2012	**137**	**(141)**	**(4)**
Changes in fair value:			
—Available-for-sale marketable securities	20		20
—Available-for-sale financial investments	41		41
—Associated companies' movements in comprehensive income	5		5
Realized net losses/(gains) transferred to the consolidated income statement:			
—Marketable securities sold	3		3
—Other financial assets sold	(19)		(19)
Amortized net losses on cash flow hedges transferred to the consolidated income statement		44	44
Impaired marketable securities and other financial assets transferred to the consolidated income statement	35		35
Deferred tax on above items	(10)	(3)	(13)
Fair value adjustments during the year	**75**	**41**	**116**
Fair value adjustments at December 31, 2012	**212**	**(100)**	**112**

8.2) The Group has investments in associated companies, principally Roche Holding AG. The Group's share in movements in these companies' other comprehensive income are recognized directly in the respective categories of the Novartis consolidated statement of comprehensive income, net of tax. The currency translation effects and fair value adjustments of associated companies are included in the corresponding Group amounts. All other movements in these companies' statements of comprehensive income are recognized directly in the consolidated statement of comprehensive income under "Novartis share of other items recorded in comprehensive income recognized by associated companies, net of taxes". These amounted to a loss of $5 million in 2014 (2013: income of $5 million, 2012: loss of $107 million).

8.3) In 2014, no cumulative translation gains or losses have been transferred into financial income. Cumulative currency translation gains of $1 million have been transferred into financial income in 2013 as a result of the liquidation of a subsidiary (2012: $6 million).

Currency translation losses of associated companies of $31 million were recognized in 2014 (2013: loss of $43 million, 2012: loss of $52 million).

8. Changes in Consolidated Statements of Comprehensive Income (Continued)

8.4) Remeasurements from defined benefit plans arise as follows:

	2014	2013	2012
	$ m	$ m	$ m
Defined benefit pension plans before tax	(999)	1,977	(2,066)
Other post-employment benefit plans before tax	(235)	163	32
Taxation on above items	412	(636)	453
Total after tax	**(822)**	**1,504**	**(1,581)**

8.5) The following table shows contributions of associated companies to other comprehensive income:

	Note	2014	2013	2012
		$ m	$ m	$ m
Fair value adjustments attributable to associated companies		5	6	5
Novartis share of other items recorded in comprehensive income recognized by associated companies, net of taxes	8.2	(5)	5	(107)
Currency translation adjustments		(31)	(43)	(52)
Other comprehensive income attributable to associated companies	**4**	**(31)**	**(32)**	**(154)**

9. Changes in Consolidated Equity

9.1) A dividend of CHF 2.45 per share was approved at the 2014 Annual General meeting for the year ended December 31, 2013, resulting in a total dividend payment of $6.8 billion in 2014. (2013: the CHF 2.30 per share dividend amounted to $6.1 billion, 2012: CHF 2.25 per share dividend payment that amounted to $6.0 billion). The amount available for distribution as a dividend to shareholders is based on the available distributable retained earnings of Novartis AG determined in accordance with the legal provisions of the Swiss Code of Obligations.

9.2) Share purchases of 79.2 million shares for $6.9 billion occurred during 2014 (2013: 40.3 million shares for $3.0 billion, 2012: 8.6 million shares for $505 million). This comprises purchases of 46.8 million shares on the first trading line of the SIX Swiss Stock Exchange for $4.1 billion (2013: 33.3 million shares for $2.5 billion, 2012: 4.6 million shares for $240 million) and 27.0 million shares on the second trading line for $2.4 billion under the share buy-back announced in November 2013 (2013: 2.2 million shares for $170 million, 2012: no share buy-back). The latter are intended for cancellation. An additional 5.4 million shares were acquired from employees for $473 million (2013: 4.8 million shares for $356 million, 2012: 4.0 million shares for $265 million).

9.3) In 2014, Novartis has entered into a share buy-back trading plan with a third party to repurchase shares on the Group's behalf under irrevocable, non-discretionary arrangements. As of December 2014, the commitment under this trading plan amounted to $658 million (2013: nil, 2012: nil). This amount reflects expected purchases by a third party under a trading plan over a rolling 90 days period. This trading plan will terminate on November 30, 2015.

9.4) 41.4 million shares were delivered as a result of options being exercised related to employee participation programs and delivery of treasury shares, which contributed $2.4 billion (2013: 34.3 million

9. Changes in Consolidated Equity (Continued)

shares for $1.7 billion, 2012: 12.0 million shares for $416 million). The average share price of the shares delivered was significantly below market price reflecting the strike price of the options exercised.

9.5) In 2014 and 2013, no shares were cancelled. In 2012, a total of 39.4 million shares were cancelled. These shares had been repurchased via the second trading line of the SIX Swiss Exchange in 2011.

9.6) Equity-settled share-based compensation is expensed in the consolidated income statement in accordance with the vesting period of the share-based compensation plans. The value for the shares and options granted is credited to consolidated equity over the respective vesting period. In 2014, 10.3 million shares were transferred to associates as part of equity-settled compensation (2013: 11.5 million shares, 2012: 10.6 million shares). In addition tax benefits arising from tax deductible amounts exceeding the expense recognized in the income statement are credited to equity.

9.7) In 2013, additional interests in subsidiaries were acquired. The reduction in equity of $10 million represents the excess of the amount paid over the amount recognized for the acquired non-controlling interest. In 2014 and 2012, no such transaction took place.

9.8) Changes in non-controlling interests in subsidiaries resulted in a reduction in consolidated equity of $120 million (2013: reduction of $109 million, 2012: reduction of $82 million).

10. Property, Plant & Equipment Movements

2014	Land	Buildings	Construction in progress	Machinery & other equipment	Total
	$ m	$ m	$ m	$ m	$ m
Cost					
January 1	**920**	**12,933**	**3,635**	**17,813**	**35,301**
Cost of assets related to discontinuing operations	(115)	(1,175)	(445)	(1,597)	(3,332)
Reclassifications[1]		455	(1,291)	836	
Additions[2]	5	113	2,397	389	2,904
Disposals and derecognitions[3]	(8)	(127)	(15)	(544)	(694)
Currency translation effects	(58)	(887)	(296)	(1,510)	(2,751)
December 31	**744**	**11,312**	**3,985**	**15,387**	**31,428**
Accumulated depreciation					
January 1	**(29)**	**(5,560)**	**(29)**	**(11,486)**	**(17,104)**
Accumulated depreciation on assets related to discontinuing operations	1	377	4	827	1,209
Depreciation charge[4]	(3)	(450)		(1,133)	(1,586)
Accumulated depreciation on disposals and derecognitions[3]	1	91		464	556
Impairment charge	(1)	(10)	(37)	(18)	(66)
Reversal of impairment charge			21	1	22
Currency translation effects	1	459	4	1,060	1,524
December 31	**(30)**	**(5,093)**	**(37)**	**(10,285)**	**(15,445)**
Net book value at December 31	**714**	**6,219**	**3,948**	**5,102**	**15,983**
Insured value at December 31					**35,534**
Net book value of property, plant & equipment under finance lease contracts					**1**
Commitments for purchases of property, plant & equipment					**826**

(1) Reclassifications between various asset categories due to completion of plant and other equipment under construction.

(2) Additions in discontinuing operations, for the period from January 1, 2014 to the portfolio transformation announcement on April 22, 2014, were $50 million.

(3) Derecognition of assets which are no longer used and are not considered to have a significant disposal value or other alternative use.

(4) Depreciation charge in discontinuing operations, for the period from January 1, 2014 to the portfolio transformation announcement on April 22, 2014, was $66 million.

10. Property, Plant & Equipment Movements (Continued)

2013	Land	Buildings	Construction in progress	Machinery & other equipment	Total
	$ m	$ m	$ m	$ m	$ m
Cost					
January 1	**867**	**12,029**	**3,113**	**16,763**	**32,772**
Cost of assets related to discontinuing operations	(34)	(178)	(2)	(82)	(296)
Reclassifications[1]		1,014	(2,102)	1,088	
Additions[2]	79	67	2,604	403	3,153
Disposals and derecognitions[3]	(2)	(171)	(21)	(640)	(834)
Currency translation effects	10	172	43	281	506
December 31	**920**	**12,933**	**3,635**	**17,813**	**35,301**
Accumulated depreciation					
January 1	**(25)**	**(5,176)**	**(10)**	**(10,622)**	**(15,833)**
Accumulated depreciation on assets related to discontinuing operations		91		57	148
Depreciation charge[4]	(4)	(465)		(1,273)	(1,742)
Accumulated depreciation on disposals and derecognitions[3]		144		562	706
Impairment charge		(60)	(19)	(50)	(129)
Reversal of impairment charge				49	49
Currency translation effects		(94)		(209)	(303)
December 31	**(29)**	**(5,560)**	**(29)**	**(11,486)**	**(17,104)**
Net book value at December 31	**891**	**7,373**	**3,606**	**6,327**	**18,197**
Insured value at December 31					**37,843**
Net book value of property, plant & equipment under finance lease contracts					**3**
Commitments for purchases of property, plant & equipment					**1,021**

(1) Reclassifications between various asset categories due to completion of plant and other equipment under construction.

(2) Additions in discontinuing operations, for the period from January 1, 2013 to the announcement of the blood transfusion diagnostics unit divestment on November 11, 2013, were $11 million.

(3) Derecognition of assets which are no longer used and are not considered to have a significant disposal value or other alternative use.

(4) Depreciation charge in discontinuing operations, for the period from January 1, 2013 to the announcement of the blood transfusion diagnostics unit divestment on November 11, 2013, was $13 million.

10. Property, Plant & Equipment Movements (Continued)

The Group was awarded government grants in the United States for the construction of a manufacturing facility to produce influenza vaccines which is reported in discontinuing operations. The contracts included a maximum of $330 million of cost reimbursement for construction activities and equipment, of which $284 million was received up to December 31, 2014 (2013: $260 million). These grants are deducted in arriving at the balance sheet carrying value of the assets since the receipt of the respective government grant is reasonably assured. There are no onerous contracts or unfulfilled conditions in connection with this grant.

In 2014, impairment charges on property, plant and equipment of $803 million were recognized. These relate to impairment charges in continuing operations of $66 million and $737 million in discontinuing operations, relating mainly to buildings, machinery and other equipment of the influenza vaccines business. In 2013, impairment charges on property, plant and equipment amounted to $129 million. These relate to impairment charges of $95 million in continuing operations and $34 million in discontinuing operations.

Reversal of impairment charges amounted to $23 million in 2014, out of which $1 million is attributable to discontinuing operations. In 2013 the reversal of impairment charges of $49 million principally relates to finding an alternative use for the previously impaired machinery and equipment initially used to manufacture aliskiren.

Borrowing costs on new additions to property, plant and equipment have been capitalized and amounted to $20 million in 2014 (2013: $9 million, 2012: $4 million).

11. Goodwill and Intangible Asset Movements

2014	Goodwill	Acquired research & development	Alcon brand name	Technologies	Currently marketed products	Marketing know-how	Other intangible assets	Total of intangible assets other than goodwill
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Cost								
January 1	**31,554**	**2,648**	**2,980**	**7,104**	**24,160**	**5,960**	**1,479**	**44,331**
Cost of assets related to discontinuing operations	(1,222)	(25)		(346)	(2,833)		(359)	(3,563)
Impact of business combinations	131	248			234			482
Reclassifications[1]		(139)		(125)	95		169	
Additions[2]		405		125	216		53	799
Disposals and derecognitions[3]		(159)			(286)		(18)	(463)
Currency translation effects	(726)	(135)		(100)	(670)		(73)	(978)
December 31	**29,737**	**2,843**	**2,980**	**6,658**	**20,916**	**5,960**	**1,251**	**40,608**
Accumulated amortization								
January 1	**(528)**	**(575)**		**(2,168)**	**(11,953)**	**(715)**	**(1,079)**	**(16,490)**
Accumulated amortization of assets related to discontinuing operations	61	13		167	1,369		213	1,762
Amortization charge[4]				(587)	(1,868)	(239)	(81)	(2,775)
Accumulated amortization on disposals and derecognitions[3]		159			283		17	459
Impairment charge		(271)			(46)		(30)	(347)
Reversal of impairment charge					70			70
Currency translation effects	41	(11)		49	461		46	545
December 31	**(426)**	**(685)**		**(2,539)**	**(11,684)**	**(954)**	**(914)**	**(16,776)**
Net book value at December 31	**29,311**	**2,158**	**2,980**	**4,119**	**9,232**	**5,006**	**337**	**23,832**

(1) Reclassifications between various asset categories as a result of product launches of acquired In-Process Research & Development.

(2) Additions in discontinuing operations, for the period from January 1, 2014 to the portfolio transformation announcement on April 22, 2014, were $11 million.

(3) Derecognitions of assets which are no longer used or being developed and are not considered to have a significant disposal value or other alternative use.

(4) Amortisation charge in discontinuing operations, for the period from January 1, 2014 to the portfolio transformation announcement on April 22, 2014, was $77 million.

11. Goodwill and Intangible Asset Movements (Continued)

Segmentation of Goodwill and Intangible Assets

The net book values at December 31, 2014 of goodwill and intangible assets are allocated to the Group's reporting segments as summarized below.

	Goodwill	Acquired research & development	Alcon brand name	Technologies	Currently marketed products	Marketing know-how	Other intangible assets	Total of intangible assets other than goodwill
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Pharmaceuticals	3,177	1,358		19	1,425		117	2,919
Alcon	17,946	301	2,980	3,367	5,848	5,006	194	17,696
Sandoz	8,180	487		733	1,959		19	3,198
Corporate	8	12					7	19
Total	**29,311**	**2,158**	**2,980**	**4,119**	**9,232**	**5,006**	**337**	**23,832**
Potential impairment charge, if any, if discounted cash flows fell by 5%					2			
Potential impairment charge, if any, if discounted cash flows fell by 10%					3			

2013	Goodwill	Acquired research & development	Alcon brand name	Technologies	Currently marketed products	Marketing know-how	Other intangible assets	Total of intangible assets other than goodwill
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Cost								
January 1	**31,605**	**2,857**	**2,980**	**7,079**	**24,412**	**5,960**	**1,303**	**44,591**
Cost of assets related to discontinuing operations	(267)	(8)			(1,059)			(1,067)
Reclassifications[1]		(447)			431		16	
Additions		251		4	170		145	570
Disposals and derecognitions[2]		(40)			(21)		(10)	(71)
Currency translation effects	216	35		21	227		25	308
December 31	**31,554**	**2,648**	**2,980**	**7,104**	**24,160**	**5,960**	**1,479**	**44,331**
Accumulated amortization								
January 1	**(515)**	**(543)**		**(1,551)**	**(10,750)**	**(476)**	**(940)**	**(14,260)**
Accumulated amortization of assets related to discontinuing operations		8			913			921
Amortization charge[3]				(610)	(1,963)	(239)	(109)	(2,921)
Accumulated amortization on disposals and derecognitions[2]		39			19		10	68
Impairment charge		(64)			(28)		(24)	(116)
Reversal of impairment charge					2			2
Currency translation effects	(13)	(15)		(7)	(146)		(16)	(184)
December 31	**(528)**	**(575)**		**(2,168)**	**(11,953)**	**(715)**	**(1,079)**	**(16,490)**
Net book value at December 31	**31,026**	**2,073**	**2,980**	**4,936**	**12,207**	**5,245**	**400**	**27,841**

(1) Reclassifications between various asset categories as a result of product launches of acquired In-Process Research & Development.

(2) Derecognitions of assets which are no longer used or being developed and are not considered to have a significant disposal value or other alternative use.

(3) Amortisation charge in discontinuing operations, for the period from January 1, 2013 to the announcement of the blood transfusion diagnostics unit divestment on November 11, 2013, was $55 million.

11. Goodwill and Intangible Asset Movements (Continued)

The recoverable amount of a cash-generating unit and related goodwill is usually based on the fair value less costs of disposal valuation method. The following assumptions are used in the calculations:

	Pharmaceuticals	Alcon	Sandoz
	%	%	%
Sales growth rate assumptions after forecast period	1.25	3	0 to 2
Discount rate (post-tax)	7	7	7

In 2014, intangible asset impairment charges of $752 million were recognized. These relate to impairment charges in continuing operations of $347 million ($302 million in the Pharmaceuticals Division and $45 million in total in the Sandoz and Alcon Divisions) and $405 million in discontinuing operations.

In 2013, intangible asset impairment charges of $116 million were recognized. These relate to impairment charges in continuing operations of $108 million ($57 million in the Alcon Division and $51 million in total in the Pharmaceuticals and Sandoz Divisions) and $8 million in discontinuing operations.

In 2012, intangible asset impairment charges of $286 million were recognized. These relate to impairment charges in continuing operations of $273 million ($211 million in the Pharmaceuticals Division and $62 million in total in the Sandoz and Alcon Divisions) and $13 million in discontinuing operations.

Reversal of prior year impairment charges amounted to $70 million (2013: $2 million, 2012: $3 million).

12. Deferred Tax Assets and Liabilities

	Property, plant & equipment	Intangible assets	Pensions and other benefit obligations of associates	Inventories	Tax loss carryforwards	Other assets, provisions and accruals	Valuation allowance	Total
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Gross deferred tax assets at January 1, 2014	**159**	**270**	**1,515**	**3,026**	**142**	**2,651**	**(22)**	**7,741**
Gross deferred tax liabilities at January 1, 2014	**(886)**	**(4,796)**	**(448)**	**(514)**	**(4)**	**(622)**		**(7,270)**
Net deferred tax balance at January 1, 2014	**(727)**	**(4,526)**	**1,067**	**2,512**	**138**	**2,029**	**(22)**	**471**
At January 1, 2014	**(727)**	**(4,526)**	**1,067**	**2,512**	**138**	**2,029**	**(22)**	**471**
Net deferred tax balance related to discontinuing operations	39	92	(73)	(40)	(19)	(93)		(94)
Credited/(charged) to income	256	525	17	395	(60)	(60)	(5)	1,068
Credited to equity						157		157
Credited/(charged) to other comprehensive income			389			(8)		381
Impact of business combinations		(159)			30	(1)		(130)
Other movements	61	40	(61)	25	(7)	(29)	13	42
Net deferred tax balance at December 31, 2014	**(371)**	**(4,028)**	**1,339**	**2,892**	**82**	**1,995**	**(14)**	**1,895**
Gross deferred tax assets at December 31, 2014	268	214	1,749	3,470	85	2,601	(14)	8,373
Gross deferred tax liabilities at December 31, 2014	(639)	(4,242)	(410)	(578)	(3)	(606)		(6,478)
Net deferred tax balance at December 31, 2014	**(371)**	**(4,028)**	**1,339**	**2,892**	**82**	**1,995**	**(14)**	**1,895**
After offsetting $379 million of deferred tax assets and liabilities within the same tax jurisdiction the balance amounts to:								
Deferred tax assets at December 31, 2014								7,994
Deferred tax liabilities at December 31, 2014								(6,099)
Net deferred tax balance at December 31, 2014								**1,895**
Gross deferred tax assets at January 1, 2013	**163**	**301**	**2,113**	**2,689**	**215**	**2,258**	**(11)**	**7,728**
Gross deferred tax liabilities at January 1, 2013	**(950)**	**(5,260)**	**(429)**	**(447)**	**(16)**	**(547)**		**(7,649)**
Net deferred tax balance at January 1, 2013	**(787)**	**(4,959)**	**1,684**	**2,242**	**199**	**1,711**	**(11)**	**79**
At January 1, 2013	**(787)**	**(4,959)**	**1,684**	**2,242**	**199**	**1,711**	**(11)**	**79**
Net deferred tax balance related to discontinuing operations					(3)			(3)
Credited/(charged) to income	96	462	16	293	(56)	21	(4)	828
Credited to equity						311		311
Charged to other comprehensive income			(636)			(30)		(666)
Other movements	(36)	(29)	3	(23)	(2)	16	(7)	(78)
Net deferred tax balance at December 31, 2013	**(727)**	**(4,526)**	**1,067**	**2,512**	**138**	**2,029**	**(22)**	**471**
Gross deferred tax assets at December 31, 2013	159	270	1,515	3,026	142	2,651	(22)	7,741
Gross deferred tax liabilities at December 31, 2013	(886)	(4,796)	(448)	(514)	(4)	(622)		(7,270)
Net deferred tax balance at December 31, 2013	**(727)**	**(4,526)**	**1,067**	**2,512**	**138**	**2,029**	**(22)**	**471**
After offsetting $366 million of deferred tax assets and liabilities within the same tax jurisdiction the balance amounts to:								
Deferred tax assets at December 31, 2013								7,375
Deferred tax liabilities at December 31, 2013								(6,904)
Net deferred tax balance at December 31, 2013								**471**

A reversal of valuation allowance could occur when circumstances make the realization of deferred taxes probable. This would result in a decrease in the Group's effective tax rate.

Deferred tax assets of $3.6 billion (2013: $3.2 billion) and deferred tax liabilities of $5.6 billion (2013: $6.4 billion) are expected to have an impact on current taxes payable after more than twelve months.

At December 31, 2014, unremitted earnings of $55 billion (2013: $48 billion) have been retained by consolidated entities for reinvestment. Therefore, no provision is made for income taxes that would be

12. Deferred Tax Assets and Liabilities (Continued)

payable upon the distribution of these earnings. If these earnings were remitted, an income tax charge could result based on the tax statutes currently in effect.

	2014	2013
	$ m	$ m
Temporary differences on which no deferred tax has been provided as they are permanent in nature related to:		
—Investments in subsidiaries	7,802	6,818
—Goodwill from acquisitions	(28,567)	(30,279)

The gross value of tax-loss carry-forwards that have, or have not, been capitalized as deferred tax assets, with their expiry dates is as follows:

	Not capitalized	Capitalized	2014 total
	$ m	$ m	$ m
One year	12	3	15
Two years	22	26	48
Three years	14		14
Four years	13	5	18
Five years	52	8	60
More than five years	345	396	741
Total	**458**	**438**	**896**

In 2014, $14 million (2013: $181 million, 2012: $75 million) of tax-loss carry-forwards expired.

	Not capitalized	Capitalized	2013 total
	$ m	$ m	$ m
One year	175	21	196
Two years	50	16	66
Three years	31	32	63
Four years	106	16	122
Five years	49	42	91
More than five years	936	581	1,517
Total	**1,347**	**708**	**2,055**

Deferred tax assets related to taxable losses of relevant Group entities are recognized to the extent it is considered probable that future taxable profits will be available against which such losses can be utilized in the foreseeable future.

13. Financial and Other Non-Current Assets

Financial Assets

	2014	2013
	$ m	$ m
Available-for-sale long-term financial investments	1,008	876
Long-term receivables from customers	334	305
Minimum lease payments from finance lease agreements	199	101
Long-term loans, advances and security deposits	179	241
Total financial assets	**1,720**	**1,523**

Other Non-Current Assets

	2014	2013
	$ m	$ m
Deferred compensation plans	381	375
Prepaid post-employment benefit plans	37	42
Other non-current assets	136	108
Total other non-current assets	**554**	**525**

14. Inventories

	2014	2013
	$ m	$ m
Raw material, consumables	756	954
Finished products	5,337	6,313
Total inventories	**6,093**	**7,267**

The amount of inventory recognized as an expense in "Cost of goods sold" in the consolidated income statements during 2014 amounted to $11.6 billion (2013: $13.3 billion, 2012: $12.9 billion). The group recognized inventory provisions amounting to $1.1 billion (2013: $1.4 billion, 2012: $1.4 billion) and reversed inventory provisions amounting to $379 million (2013: $474 million, 2012: $723 million).

The reversals mainly result from the release of products initially requiring additional quality control inspections and from the reassessment of inventory values manufactured prior to regulatory approval but for which approval was subsequently received.

15. Trade Receivables

	2014	2013
	$ m	$ m
Total gross trade receivables	8,431	10,097
Provisions for doubtful trade receivables	(156)	(195)
Total trade receivables, net	**8,275**	**9,902**

The following table summarizes the movement in the provision for doubtful trade receivables:

	2014	2013	2012
	$ m	$ m	$ m
January 1	**(195)**	**(217)**	**(219)**
Provisions on doubtful trade receivable related to discontinuing operations	15	1	
Impact of business combinations			(1)
Provisions for doubtful trade receivables charged to the consolidated income statement	(92)	(98)	(107)
Utilization or reversal of provisions for doubtful trade receivables	101	120	111
Currency translation effects	15	(1)	(1)
December 31	**(156)**	**(195)**	**(217)**

The following sets forth details of the age of trade receivables that are not overdue as specified in the payment terms and conditions established with Novartis customers as well as an analysis of overdue amounts and related provisions for doubtful trade receivables:

	2014	2013
	$ m	$ m
Not overdue	7,406	8,522
Past due for not more than one month	334	502
Past due for more than one month but less than three months	275	297
Past due for more than three months but less than six months	174	254
Past due for more than six months but less than one year	102	257
Past due for more than one year	140	265
Provisions for doubtful trade receivables	(156)	(195)
Total trade receivables, net	**8,275**	**9,902**

Trade receivable balances include sales to drug wholesalers, retailers, private health systems, government agencies, managed care providers, pharmacy benefit managers and government-supported healthcare systems. Novartis continues to monitor sovereign debt issues and economic conditions in Greece, Italy, Portugal, Spain (GIPS) and other countries and evaluates trade receivables in these countries for potential collection risks. Substantially all of the trade receivables from such countries are due directly from local governments or from government-funded entities. Deteriorating credit and economic conditions and other factors in these countries have resulted in, and may continue to result in an

15. Trade Receivables (Continued)

increase in the average length of time that it takes to collect these trade receivables and may require Novartis to re-evaluate the collectability of these trade receivables in future periods.

With regard to the GIPS countries, the countries with the largest outstanding trade receivables exposure are Italy and Spain. The majority of the outstanding trade receivables from these countries are due directly from local governments or from government-funded entities. A summary of the outstanding trade receivables from these countries and related provisions at December 31, 2014 and 2013 is as follows:

Italy

	2014	2013
	$ m	$ m
Gross trade receivables at December 31	385	636
Past due for more than one year at December 31	37	55
Provision at December 31	29	43

Spain

	2014	2013
	$ m	$ m
Gross trade receivables at December 31	271	563
Past due for more than one year at December 31	13	111
Provision at December 31	6	22

Novartis does not expect to write off trade receivable amounts that are not past due nor unprovided for.

Trade receivables include amounts denominated in the following major currencies:

Currency	2014	2013
	$ m	$ m
CHF	184	235
EUR	1,562	2,401
GBP	184	223
JPY	951	1,464
$	3,059	2,823
Other	2,335	2,756
Total trade receivables, net	**8,275**	**9,902**

16. Marketable Securities, Commodities, Time Deposits, Derivative Financial Instruments and Cash and Cash Equivalents

Marketable Securities, Commodities, Time Deposits and Derivative Financial Instruments	2014	2013
	$ m	$ m
Debt securities	327	323
Equity securities	15	47
Fund investments	35	11
Total available-for-sale marketable securities	**377**	**381**
Commodities	97	97
Time deposits with original maturity more than 90 days	6	1,931
Derivative financial instruments	356	121
Accrued interest on debt securities and time deposits	3	5
Total marketable securities, commodities, time deposits and derivative financial instruments	**839**	**2,535**

At December 31, 2014 all debt securities are denominated in $ except for $1 million in CHF (2013: $1 million) and $25 million in EUR (2013: $26 million), respectively.

Cash and Cash Equivalents	2014	2013
	$ m	$ m
Current accounts	3,607	3,995
Time deposits and short-term investments with original maturity less than 90 days	9,416	2,692
Total cash and cash equivalents	**13,023**	**6,687**

17. Other Current Assets

	2014	2013
	$ m	$ m
VAT receivable	509	1,221
Withholding tax recoverable	144	107
Income tax receivables	202	265
Reimbursements from insurers	87	145
Prepaid expenses		
—Third parties	547	668
—Associated companies	3	3
Other receivables		
—Third parties	1,033	978
—Associated companies	5	5
Total other current assets	**2,530**	**3,392**

18. Details of Shares and Share Capital Movements

	Number of shares[1]				
	Dec 31, 2012	Movement in year	Dec 31, 2013	Movement in year	Dec 31, 2014
Total Novartis shares	2,706,193,000		2,706,193,000		2,706,193,000
Total treasury shares	(285,572,826)	5,464,134	(280,108,692)	(27,458,051)	(307,566,743)
Total outstanding shares	**2,420,620,174**	**5,464,134**	**2,426,084,308**	**(27,458,051)**	**2,398,626,257**
	$ m	$ m	$ m	$ m	$ m
Share capital	1,001		1,001		1,001
Treasury shares	(92)	3	(89)	(14)	(103)
Outstanding share capital	**909**	**3**	**912**	**(14)**	**898**

[1] All shares are voting shares, which are registered, authorized, issued and fully paid.

During 2014, 51.7 million treasury shares were delivered as a result of options exercised and physical share deliveries related to employee participation programs (2013: 45.8 million shares). 52.2 million shares were repurchased on the SIX Swiss Exchange first trading line and from employees (shares previously granted under the respective programs). In 2013, shares repurchased via these channels amounted to 38.1 million treasury shares. In addition, Novartis repurchased 27.0 million shares on the second trading line in 2014 under the announced share buy-back of $5.0 billion spread over two years (2013: 2.2 million shares). With these transactions, the total number of shares outstanding was reduced by 27.5 million in 2014 (2013: increase of 5.5 million shares). There are 17 million outstanding written call options on Novartis shares, originally issued as part of the share-based compensation for associates. The market maker has acquired these options but they have not yet been exercised. The weighted average exercise price of these options is $56.36 and they have contractual lives of 10 years.

19. Non-Current Financial Debt

	2014	2013
	$ m	$ m
Straight bonds	15,982	12,909
Liabilities to banks and other financial institutions[1]	803	919
Finance lease obligations	3	4
Total (including current portion of non-current financial debt)	**16,788**	**13,832**
Less current portion of non-current financial debt	(2,989)	(2,590)
Total non-current financial debts	**13,799**	**11,242**
Straight bonds		
3.625% CHF 800 million bond 2008/2015 of Novartis AG, Basel, Switzerland, issued at 100.35%	807	896
5.125% $3 000 million bond 2009/2019 of Novartis Securities Investment Ltd., Hamilton, Bermuda, issued at 99.822%	2,991	2,989
4.125% $2 000 million bond 2009/2014 of Novartis Capital Corporation, New York, United States, issued at 99.897%		2,000
4.25% EUR 1 500 million bond 2009/2016 of Novartis Finance S.A., Luxembourg, Luxembourg, issued at 99.757%	1,821	2,064
2.9% $2 000 million bond 2010/2015 of Novartis Capital Corporation, New York, United States, issued at 99.522%	1,999	1,996
4.4% $1 000 million bond 2010/2020 of Novartis Capital Corporation, New York, United States, issued at 99.237%	993	992
2.4% $1 500 million bond 2012/2022 of Novartis Capital Corporation, New York, United States, issued at 99.225%	1,486	1,484
3.7% $500 million bond 2012/2042 of Novartis Capital Corporation, New York, United States, issued at 98.325%	488	488
3.4% $2 150 million bond 2014/2024 of Novartis Capital Corporation, New York, United States, issued at 99.287%	2,128	
4.4% $1 850 million bond 2014/2044 of Novartis Capital Corporation, New York, United States, issued at 99.196%	1,823	
0.75% EUR 600 million bond 2014/2021 of Novartis Finance S.A., Luxembourg, Luxembourg, issued at 99.134%	721	
1.625% EUR 600 million bond 2014/2026 of Novartis Finance S.A., Luxembourg, Luxembourg, issued at 99.697%	725	
Total straight bonds	**15,982**	**12,909**

[1] Average interest rate 0.9% (2013: 0.8%)

19. Non-Current Financial Debt (Continued)

	2014	2013
	$ m	$ m
Breakdown by maturity		
2014		2,590
2015	2,989	3,098
2016	1,838	2,085
2017	175	9
2018	342	9
2019	3,068	3,072
After 2019	8,376	2,969
Total	**16,788**	**13,832**

	2014	2013
	$ m	$ m
Breakdown by currency		
$	11,912	9,953
EUR	3,329	2,141
JPY	669	762
CHF	807	896
Others	71	80
Total	**16,788**	**13,832**

Fair value comparison	2014 Balance sheet	2014 Fair values	2013 Balance sheet	2013 Fair values
	$ m	$ m	$ m	$ m
Straight bonds	15,982	17,013	12,909	13,547
Others	806	806	923	923
Total	**16,788**	**17,819**	**13,832**	**14,470**

The fair values of straight bonds are determined by quoted market prices. Other financial debts are recorded at notional amounts which are a reasonable approximation of the fair values.

Collateralized non-current financial debt and pledged assets	2014	2013
	$ m	$ m
Total amount of collateralized non-current financial debts	1	7
Total net book value of property, plant & equipment pledged as collateral for non-current financial debts	184	139

The Group's collateralized non-current financial debt consists of loan facilities at usual market conditions.

19. Non-Current Financial Debt (Continued)

The percentage of fixed rate financial debt to total financial debt was 82% at December 31, 2014, and 77% at December 31, 2013.

Financial debts, including current financial debts, contain only general default covenants. The Group is in compliance with these covenants.

The average interest rate on total financial debt in 2014 was 3.4% (2013: 3.3%, 2012: 2.9%).

20. Provisions and Other Non-Current Liabilities

	2014	2013
	$ m	$ m
Accrued liability for employee benefits:		
—Defined benefit pension plans	3,839	3,407
—Other long-term employee benefits and deferred compensation	518	557
—Other post-employment benefits	1,054	860
Environmental remediation provisions	828	961
Provisions for product liabilities, governmental investigations and other legal matters	521	463
Contingent consideration	465	460
Other non-current liabilities	447	560
Total	**7,672**	**7,268**

Environmental Remediation Provisions

The material components of the environmental remediation provisions consist of costs to sufficiently clean and refurbish contaminated sites to the extent necessary and to treat and where necessary continue surveillance at sites where the environmental remediation exposure is less significant. The provision recorded at December 31, 2014 totals $0.9 billion (2013: $1.1 billion) of which $95 million (2013: $100 million) is current.

A substantial portion of the environmental remediation provision relates to the remediation of Basel regional landfills in the adjacent border areas in Switzerland, Germany and France following internal and external investigations completed during 2007 and the subsequent creation of an environmental remediation provision. The provisions are re-assessed on a yearly basis and have been adjusted as necessary.

In the United States, Novartis has been named under federal legislation (the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended) as a potentially responsible party (PRP) in respect of certain sites. Novartis actively participates in, or monitors, the clean-up activities at the sites in which it is a PRP. The provision takes into consideration the number of other PRPs at each site and the identity and financial position of such parties in light of the joint and several nature of the liability.

20. Provisions and Other Non-Current Liabilities (Continued)

The following table shows the movements in the environmental liability provisions during 2014, 2013 and 2012:

	2014	2013	2012
	$ m	$ m	$ m
January 1	**1,061**	**1,120**	**1,118**
Cash payments	(33)	(68)	(30)
Releases	(6)	(19)	(39)
Interest expense arising from discounting provisions			33
Additions	2	2	10
Currency translation effects	(101)	26	28
December 31	**923**	**1,061**	**1,120**
Less current liability	(95)	(100)	(119)
Non-current environmental remediation provisions at December 31	**828**	**961**	**1,001**

The expected timing of the related cash outflows as of December 31, 2014 is currently projected as follows:

	Expected cash outflows
	$ m
Due within two years	195
Due later than two years, but within five years	187
Due later than five years but within ten years	483
Due after ten years	58
Total environmental remediation liability provisions	**923**

Provisions for Product Liabilities, Governmental Investigations and Other Legal Matters

Novartis has established provisions for certain product liabilities, governmental investigations and other legal matters, including provisions for expected legal costs where a potential cash outflow is probable and Novartis can make a reliable estimate of the amount of the outflow. These provisions represent the Group's current best estimate of the total financial effect for the matters listed below and for other less significant matters. Potential cash outflows reflected in a provision might be fully or partially off-set by insurance in certain circumstances. Novartis has not established provisions for potential damage awards for certain additional legal claims against our subsidiaries if Novartis currently believes it is likely that it ultimately will prevail in them. In addition, with respect to the matters listed below in which the Group has an adverse damage award, no provision has been made for certain of them, because it is the Group's current best estimate based on its views as to the merits of the cases and its experience in such matters, that it ultimately will prevail in these cases on appeal. Such cases include a $30 million Mississippi Chancery Court Average Wholesale Price verdict against Sandoz that is currently on appeal. In total, these not-provisioned-for matters include more than 1,000 individual product liability cases and certain

20. Provisions and Other Non-Current Liabilities (Continued)

other legal matters. Plaintiffs' alleged claims in these matters, which Novartis does not believe to be entirely remote but which do not fulfill the conditions for the establishment of provisions, currently aggregate to, according to Novartis' current best belief, approximately $1.3 billion. In addition, in some of these matters there are claims for punitive or multiple (treble) damages, civil penalties and disgorgement of profits that, in Novartis' view, are either wholly or partially unspecified or wholly or partially unquantifiable at present. While it discloses the amounts claimed by plaintiffs in these not-provisioned-for matters, the Group believes that information about the amounts claimed by plaintiffs generally is not meaningful for purposes of determining a reliable estimate of a loss that is probable or more than remote. A number of other legal matters are in such early stages or the issues presented are such that the Group has not made any provisions other than for legal fees since it cannot currently estimate either a potential outcome or the amount of any potential losses. For these reasons, among others, the Group generally is unable to make a reliable estimate of possible loss with respect to such cases. It is therefore not practicable to provide information about the potential financial impact of those cases. In a limited number of cases for which the Group was able to make a reliable estimate of the possible loss or the range of possible loss, the Group believes that publication of such information on a case-by-case basis would seriously prejudice the Group's position in ongoing legal proceedings or in any related settlement discussions. Accordingly, in such cases, information has been disclosed with respect to the nature of the contingency, but no disclosure is provided as to an estimate of the possible loss or range of possible loss.

Legal Matters

A number of Novartis companies are, and will likely continue to be, subject to various legal proceedings and investigations that arise from time to time, including proceedings regarding product liability, sales and marketing practices, commercial disputes, employment, and wrongful discharge, antitrust, securities, health and safety, environmental, tax, international trade, privacy, and intellectual property matters. As a result, the Group may become subject to substantial liabilities that may not be covered by insurance and could affect our business and reputation. While Novartis does not believe that any of these legal proceedings will have a material adverse effect on its financial position, litigation is inherently unpredictable and large judgments sometimes occur. As a consequence, Novartis may in the future incur judgments or enter into settlements of claims that could have a material adverse effect on its results of operations or cash flow.

Governments and regulatory authorities around the world have been stepping up their compliance and law enforcement activities in recent years in key areas, including marketing practices, pricing, corruption, trade restrictions, embargo legislation, insider trading, antitrust, and data privacy. Further, when one government or regulatory authority undertakes an investigation, it is not uncommon for other governments or regulators to undertake investigations regarding the same or similar matters. Responding to such investigations is costly and requires an increasing amount of management's time and attention. In addition, such investigations may affect our reputation, create a risk of potential exclusion from government reimbursement programs in the US and other countries, and may lead to (or arise from) litigation. These factors have contributed to decisions by Novartis and other companies in the healthcare industry, when deemed in their interest, to enter into settlement agreements with governmental authorities around the world prior to any formal decision by the authorities or a court. Those government settlements have involved and may continue to involve, in current government investigations and proceedings, large cash payments, sometimes in the hundreds of millions of dollars or more, including the potential repayment of amounts allegedly obtained improperly and other penalties, including treble

20. Provisions and Other Non-Current Liabilities (Continued)

damages. In addition, settlements of government healthcare fraud cases often require companies to enter into corporate integrity agreements, which are intended to regulate company behavior for a period of years. Our affiliate Novartis Pharmaceuticals Corporation is a party to such an agreement, which will expire in 2015. Also, matters underlying governmental investigations and settlements may be the subject of separate private litigation.

The following is a summary of significant legal proceedings to which Novartis or its subsidiaries are a party or were a party and that concluded in 2014.

Investigations and related litigations

Southern District of New York (SDNY) marketing practices investigation and litigation

In April 2013, the US government filed a civil complaint in intervention to an individual *qui tam* action against Novartis Pharmaceuticals Corporation (NPC) in the United States District Court (USDC) for the SDNY involving several of NPC's cardiovascular medications. The suit is related to a previously disclosed 2011 investigation of the United States Attorney's Office (USAO) for the SDNY relating to marketing practices, including the remuneration of healthcare providers, in connection with three NPC products (*Lotrel*, *Starlix* and *Valturna*). The complaint, as subsequently amended, asserts federal False Claims Act and common law claims with respect to speaker programs for NPC's cardiovascular medications allegedly serving as mechanisms to provide kickbacks to healthcare professionals. It seeks unspecified damages, which according to the complaint are "substantial", including treble damages and maximum civil penalties per claim, as well as disgorgement of Novartis profits from the alleged unlawful conduct. In August 2013, New York State filed a civil complaint in intervention asserting similar claims. Neither government complaint in intervention adopted the individual relator's claims with respect to off-label promotion of *Valturna*, which were subsequently dismissed with prejudice by the court. NPC vigorously contests the SDNY, New York State and individual claims, both as to alleged liability and amount of damages and penalties.

SDNY / Western District of New York (WDNY) healthcare fraud investigation

In 2011, Alcon Laboratories, Inc. (ALI) received a subpoena from the United States Department of Health & Human Services relating to an investigation into allegations of healthcare fraud. The subpoena requests the production of documents relating to marketing practices, including the remuneration of healthcare providers, in connection with certain ALI products (*Vigamox*, *Nevanac*, *Omnipred*, *Econopred*; surgical equipment). ALI is cooperating with the investigation, which is civil in nature.

Western District of Kentucky (WDKY) investigation

In 2012, NPC received a subpoena from the USAO for the WDKY requesting the production of documents relating to marketing practices, including alleged remuneration of healthcare providers and off-label promotion, in connection with certain NPC products (including *Tekturna*, *Valturna*, *Reclast*, *Exelon* Patch and other products). NPC is cooperating with the investigation, which is civil and criminal in nature.

20. Provisions and Other Non-Current Liabilities (Continued)

SDNY specialty pharmacies investigation and litigation

In April 2013, the US government filed a civil complaint in intervention to a *qui tam* action against NPC in the USDC for the SDNY. The suit is related to a previously disclosed 2012 investigation of the USAO for the SDNY into NPC's interactions with certain specialty pharmacies concerning in particular *Myfortic*, *Exjade*, *Gleevec*, *Tasigna* and *TOBI*. The complaint, as subsequently amended, asserts federal False Claims Act and state law claims related to alleged unlawful contractual discounts and rebates to specialty pharmacies in connection with *Myfortic*, and alleged unlawful contractual discounts, rebates and patient referrals to one specialty pharmacy in connection with *Exjade*. The US government seeks unspecified damages, which according to the complaint are "substantial", including treble damages and maximum civil penalties per claim. In January 2014, eleven states filed three complaints in intervention asserting similar claims related to *Exjade*; and the *qui tam* relator served on NPC an amended complaint also asserting similar claims with respect to *Myfortic* and *Exjade*, as well as claims involving *Tasigna*, *Gleevec* and *TOBI* that the federal and various state governments declined to pursue. NPC vigorously contests all government and relator claims, both as to alleged liability and amount of damages and penalties.

Northern District of Texas (NDTX) investigation

In 2012, Alcon was notified that the USAO for the NDTX is conducting an investigation relating to the export of Alcon products to various countries subject to United States trade sanctions, including Iran, allegedly in violation of applicable trade sanctions, and received a grand jury subpoena requesting the production of documents for a period beginning in 2005 relating to this investigation. Alcon is cooperating with the investigation.

SDNY Gilenya investigation

In 2013, NPC received a civil investigative demand (CID) from the USAO for the SDNY requesting the production of documents and information relating to marketing practices for *Gilenya*, including the remuneration of healthcare providers in connection therewith. NPC is cooperating with this civil investigation.

District of New Jersey (DNJ) investigation

In late September 2014, ALI received a subpoena from the USAO for the DNJ relating to an investigation of Alcon sales practices. ALI is cooperating with this investigation.

New York state investigation

In November 2014, ALI received a civil subpoena from the New York state attorney general relating to an investigation into a unilateral pricing policy program. ALI is at the outset of assessing the facts and is cooperating with this investigation.

Lucentis/Avastin® *matters in Italy and France*

In 2013, the Italian Competition Authority (ICA) opened an investigation to assess whether Novartis Farma S.p.A., Novartis AG, F. Hoffmann-La Roche AG, Genentech Inc. and Roche S.p.A. colluded to artificially differentiate Avastin® and *Lucentis* in order to avoid the erosion of the sales of *Lucentis* by

20. Provisions and Other Non-Current Liabilities (Continued)

off-label Avastin® with the aim of preserving the market position of *Lucentis* in Italy. In March 2014, the ICA imposed a fine equivalent to $125 million on Novartis AG and Novartis Farma S.p.A. and a fine on F. Hoffmann-La Roche AG and Roche S.p.A. equivalent to $122 million. Novartis appealed the ICA decision and, as required by Italian law, has paid the ICA fine, subject to the right to later claim recoupment. In December 2014, the Tribunale amministrativo regionale (TAR) del Lazio published a decision rejecting all appeals. Novartis intends to appeal the decision of the TAR Lazio. In October 2014, Novartis also appealed the resolution of the Italian Medicines Agency to include Avastin® in a list of drugs to be reimbursed off-label. The Italian Ministry of Health (MoH) has indicated in a letter that it intended to seek a total equivalent of approximately $1.4 billion in damages from Novartis and Roche entities based on the above allegations, and the Lombardia region has sent a payment request equivalent to approximately $71 million. Novartis vigorously contests the MoH and Lombardia claims.

The French Competition Authority carried out an inspection in April 2014 on the premises of Novartis Groupe France and Roche with respect to the French market for anti-vascular endothelial growth factor (VEGF) products indicated for the treatment of wet age-related macular degeneration.

Japan investigations

Novartis Pharma K.K. (NPKK) has completed a comprehensive investigation with external specialists launched in April 2013 which identified that two former employees of NPKK were not appropriately identified as NPKK employees in the trial publications for five post-registration investigator initiated trials (IITs) regarding valsartan. In October 2013, the Japanese Ministry of Health, Labor and Welfare (MHLW) published an interim report in which it required further actions, including investigations by the government into allegations of exaggerated advertising. None of the trials/publications were used for registration purposes. In July 2014, the Tokyo District Public Prosecutor Office indicted a former NPKK employee, and also NPKK under the dual liability concept in Japanese law, in two counts for alleged manipulation of data in sub-analysis publications of the Kyoto Heart Study regarding valsartan. The charges against NPKK are subject to a maximum total fine of JPY 4 million. Novartis is cooperating fully with the authorities.

Also in January 2014, allegations of inappropriate involvement of NPKK representatives in a nilotinib IIT being conducted by the University of Tokyo Hospital were raised in the media. In February 2014, NPKK established an External Investigation Committee (EIC) to clarify the actual involvement in the IIT as well as the root cause and provide a proposal for preventing recurrence. In March 2014, the EIC issued a final report finding various instances of improper conduct, including improper handling of confidential patient information, document destruction and failure to report adverse events. The MHLW issued a business improvement order in July 2014, following NPKK's disclosure of its failure to report adverse events. Novartis is implementing a business improvement plan and has notified all competent health authorities worldwide about the adverse events reporting issue, and several have requested additional information and clarification from Novartis. In addition to taking remedial action, Novartis also conducted a comprehensive review of NPKK's conduct and business practices related to IITs and the other above issues in Japan, and has released new global guidelines for IITs.

The MHLW plans to issue new guidelines governing the conduct of IITs in Japan, and it is in the process of determining any additional sanctions against NPKK for the above conduct which could potentially include a temporary suspension of certain business activities.

20. Provisions and Other Non-Current Liabilities (Continued)

Internal travel agencies investigation

After reports of Chinese government investigations of competitors for alleged improper use of certain China-based travel agencies to reward healthcare providers, Novartis commenced an internal investigation in 2013 concerning its local affiliates' relationships with China-based travel agencies (and other vendors). Novartis is communicating with the US Securities and Exchange Commission (SEC) about this internal investigation.

Italy investigations

In January 2014, the ICA opened an investigation to assess whether Novartis Farma S.p.A. and Italfarmaco S.p.A. colluded on the supply of octreotide acetate (*Sandostatin LAR* and Longastatina® LAR, respectively) to prevent competition in tenders issued by the regions of Emilia Romagna, Veneto and Lombardia.

In June 2014, the public prosecutor of Siena initiated a criminal investigation of Novartis Vaccines and Diagnostics S.r.l. with respect to allegations that the transfer price of the adjuvant *MF59* was unlawfully marked up. The investigation concerns whether the *Focetria* and *Fluad* vaccines sold to the government were over-priced and whether the Italian Ministry of Health paid an inflated amount in a dispute settlement relating to the supply of *Focetria* during the 2009 pandemic.

Product liability matters

Zometa/Aredia product liability litigation

NPC is a defendant in approximately 525 remaining cases brought in US courts, in which plaintiffs claim to have experienced osteonecrosis of the jaw or atypical femur fracture after treatment with *Zometa* or *Aredia*, which are used to treat patients whose cancer has spread to the bones. From the outset of the litigation, approximately 332 cases have been dismissed on pre-trial summary judgment or other dismissal, of which 16 remain on appeal.

Through the end of the fourth quarter of 2014, judgment has been entered in favor of NPC in nine jury trials, seven of which are final, and plaintiffs have obtained one verdict outside the centralized proceedings and six verdicts in the centralized litigation. In the centralized proceedings, juries awarded compensatory damages (averaging approximately $0.7 million in each case), no punitive damages in four cases, and punitive damages (as capped by applicable state and federal laws) totaling approximately $1.8 million in the remaining two. Four of the verdicts in favor of plaintiffs in the centralized litigation are not final given remaining post-trial and appeal options in each. In the one plaintiff's verdict outside the centralized proceedings, the jury awarded $2.65 million in compensatory damages and no punitive damages.

Further trials are scheduled. Individual case results, which can depend on the particular facts of a given case, may not necessarily be predictive for other cases. The cases are being vigorously defended.

20. Provisions and Other Non-Current Liabilities (Continued)

Aclasta/Reclast product liability litigation

NPC is a defendant in 21 US product liability actions involving *Aclasta* and *Reclast* and alleging atypical femur fracture injuries, most of which are in New Jersey state or federal court coordinated with claims against other bisphosphonate manufacturers. There are also three Canadian putative class actions brought against numerous bisphosphonate manufacturers including NPC, Novartis Pharmaceuticals Canada Inc. and Novartis International AG in Quebec, Alberta and Saskatchewan. All cases are being vigorously defended.

Metoclopramide product liability litigation

Sandoz is a defendant, along with numerous manufacturers of brand pharmaceuticals, in 395 product liability actions in the state courts in Pennsylvania and California claiming that the use of metoclopramide, the generic version of the brand name drug Reglan®, caused personal injuries including tardive dyskinesia. Sandoz denies the allegations and is vigorously defending the cases.

Tekturna/Rasilez/Valturna product liability litigation

NPC and certain other Novartis affiliates are defendants in 12 individual lawsuits pending in the USDC for the DNJ, and one in Alberta, Canada, claiming that treatment with *Tekturna*, *Rasilez* and/or *Valturna* caused renal failure, kidney disease or stroke. The cases are being vigorously defended.

Arbitration

Equa arbitration

In 2013, Sanofi K.K. (Sanofi) commenced an arbitration against NPKK relating to the termination of a co-promotion agreement in Japan of *Equa* (*Galvus*), which is used to treat type 2 diabetes. Sanofi seeks an award equivalent to $386 million, at a minimum, together with a request for payment of interest and expenses as well as legal and other costs of the proceedings. NPKK is vigorously defending the action as well as prosecuting a counterclaim against Sanofi.

Other matters

Average Wholesale Price (AWP) litigation

Claims have been brought by various US state governmental entities against various pharmaceutical companies, including certain Sandoz entities and NPC, alleging that they fraudulently overstated the AWP that is or has been used by payors, including state Medicaid agencies, to calculate reimbursements to healthcare providers. In the second quarter of 2014, Sandoz reached a settlement of the Illinois claims against it for $63 million. Further settlements have been obtained in the cases brought by the states of Kansas and Utah against NPC, each for amounts that are not material to Novartis. Actions brought by the states of Illinois, Mississippi, Utah and Wisconsin remain pending against one or more Novartis companies. At least one trial is scheduled for 2015. NPC is also a defendant in a putative class action brought by private payors in New Jersey. The cases are being vigorously defended.

20. Provisions and Other Non-Current Liabilities (Continued)

Qui tam actions

NPC is a defendant in a relator's *qui tam* action in the USDC for the Eastern District of Pennsylvania (EDPA) asserting federal and state False Claims Act claims relating to certain alleged marketing practices involving Elidel®. The federal government and several states declined to intervene in the EDPA action. The relator's complaint does not specify an amount of monetary damages sought but alleges that NPC's alleged misconduct has caused the submission of millions of false claims in violation of state and federal laws. NPC is vigorously contesting the action.

In 2006, NPC received a subpoena from the US government seeking certain information regarding the marketing and promotion of *Xolair*. The investigation, which was previously disclosed, was prompted by a *qui tam* complaint filed in the District of Massachusetts (D. Mass.) in 2006, asserting various federal False Claims Act and state claims relating to certain alleged improper marketing practices involving *Xolair*. In addition to the 2006 suit, relator complaints were filed in D. Mass. in 2010 and 2012 against various Novartis, Genentech and Roche entities, containing allegations similar to those in the 2006 complaint. In 2011, the US and various state governments declined to intervene in the relators' actions, and closed the investigation. In June 2014, the relator in the 2010 action voluntarily dismissed his claims in that complaint with prejudice; the US and various states subsequently consented to the dismissal. The relator complaints in combination claim more than $1.5 billion in alleged treble damages, civil penalties and disgorgement of profits. Novartis denies the allegations both as to the merits and the monetary claims and is vigorously contesting these actions.

Solodyn® antitrust class actions and FTC investigation

Since July 22, 2013, fifteen class action complaints have been filed against manufacturers of the brand drug Solodyn® and its generic equivalents, including Sandoz Inc. The cases have been consolidated and transferred for pretrial purposes to the D. Mass. The plaintiffs purport to represent direct and indirect purchasers of Solodyn® branded products and assert violations of federal and state antitrust laws, including allegations in connection with separate settlements by Medicis with each of the other defendants, including Sandoz Inc., of patent litigation relating to generic Solodyn®. Plaintiffs seek, among other things, treble damages and other damages and costs. The conduct challenged in these cases is also the subject of a pending investigation by the Federal Trade Commission (FTC) in which Sandoz Inc. has cooperated in providing documents and other information in response to a CID. Sandoz is vigorously defending this litigation.

Oriel litigation

A complaint was filed in October 2013 in the Supreme Court-New York County by Shareholder Representative Services LLC, purportedly on its own behalf and in its capacity as representative of former shareholders of Oriel Therapeutics, Inc. (Oriel) against Sandoz Inc. and two affiliates and two former officers of Sandoz AG. Plaintiffs assert various common law and statutory contract, fraud and negligent misrepresentation claims arising out of the Sandoz Inc. purchase of Oriel and seek $335 million in compensatory damages as well as certain rescissionary relief and punitive damages. Sandoz denies the allegations and is vigorously defending the case.

20. Provisions and Other Non-Current Liabilities (Continued)

Consumer class actions

Novartis companies have been the subject of various consumer lawsuits that are brought as proposed class actions but in which class certification has not been decided. For example, four putative class actions were brought in December 2013 and January 2014 against Novartis and its consumer health unit. They generally claim that it was a deceptive practice to sell *Excedrin* Migraine at a higher price than *Excedrin* Extra Strength when the two have the same active ingredients, even though the products have different labels and clearly disclose their active ingredients. In 2014, three of the four putative class actions were dismissed; the remaining one is pending in the DNJ.

Since November 2012, six putative consumer fraud class action litigations were commenced against Alcon (and in four cases Sandoz) in federal courts in the Southern Districts of Illinois (S.D. Ill.) and Florida and the Districts of Missouri, Massachusetts and New Jersey. They claim that Alcon's, Sandoz's and many other manufacturers defendants' eye drop products were deceptively designed so that the drop dosage is more than necessary to be absorbed in the eye or there is too much solution in each bottle for the course of the treatment, leading to wastage and higher costs to patient consumers. Three cases remain pending in the S.D. Ill., D. Mass. and DNJ. Novartis is vigorously defending the remaining cases, both on the merits and with respect to class certification.

Intellectual Property

Novartis companies are involved in legal proceedings concerning intellectual property rights owned either by Novartis companies or third parties. The inherent unpredictability of such proceedings means that there can be no assurances as to their ultimate outcome. A negative result in any such proceeding could potentially adversely affect the ability of certain Novartis companies to sell their products or require the payment of substantial damages or royalties.

Concluded legal matters

European Commission (EC) dawn raid at Sandoz S.A.S. (Sandoz France)

In 2009, the EC searched the offices of Sandoz France, alleging that Sandoz France entered into anti-competitive price coordination practices with other generic pharmaceutical companies and via the French trade association for generic pharmaceutical companies. In July 2014, the EC closed this investigation.

Fanapt® *arbitration*

In May 2014, Vanda Pharmaceuticals Inc. commenced an arbitration against Novartis Pharma AG relating to the licensing of Fanapt®. The case was resolved in the fourth quarter of 2014 for an amount that is not material to Novartis.

20. Provisions and Other Non-Current Liabilities (Continued)

Summary of Product Liability, Governmental Investigations and Other Legal Matters Provision Movements:

	2014	2013	2012
	$ m	$ m	$ m
January 1	**924**	**998**	**1,182**
Provisions related to discontinuing operations	(37)		
Impact of business combinations			60
Cash payments	(454)	(373)	(362)
Releases of provisions	(135)	(184)	(262)
Additions to provisions	549	499	389
Currency translation effects	2	(16)	(9)
December 31	**849**	**924**	**998**
Less current portion	(328)	(461)	(368)
Non-current product liabilities, governmental investigations and other legal matters provisions at December 31	**521**	**463**	**630**

Novartis believes that its total provisions for investigations, product liability, arbitration and other legal matters are adequate based upon currently available information. However, given the inherent difficulties in estimating liabilities, there can be no assurance that additional liabilities and costs will not be incurred beyond the amounts provided.

21. Current Financial Debt

	2014	2013
	$ m	$ m
Interest bearing accounts of associates payable on demand	1,651	1,718
Bank and other financial debt	1,272	1,323
Commercial paper	648	1,042
Current portion of non-current financial debt	2,989	2,590
Fair value of derivative financial instruments	52	103
Total current financial debt	**6,612**	**6,776**

The consolidated balance sheet amounts of current financial debt, other than the current portion of non-current financial debt, approximate the estimated fair value due to the short-term nature of these instruments.

The weighted average interest rate on the bank and other current financial debt (including employee deposits from the compensation of associates employed by Swiss entities) was 2.6% in 2014 and 2.3% in 2013.

22. Provisions and Other Current Liabilities

	2014	2013
	$ m	$ m
Taxes other than income taxes	549	624
Restructuring provisions	333	174
Accrued expenses for goods and services received but not invoiced	1,076	553
Accruals for royalties	561	468
Provisions for revenue deductions	3,533	4,182
Accruals for compensation and benefits including social security	1,968	2,386
Environmental remediation liabilities	95	100
Deferred income	329	70
Provision for product liabilities, governmental investigations and other legal matters	328	461
Accrued share-based payments	248	255
Contingent considerations	291	112
Commitment for repurchase of own shares	658	
Other payables	479	1,550
Total provisions and other current liabilities	**10,448**	**10,935**

Provisions are based upon management's best estimate and adjusted for actual experience. Such adjustments to the historic estimates have not been material.

Provision for Deductions from Revenue

The following table shows the movement of the provision for deductions from revenue:

	2014	2013	2012
	$ m	$ m	$ m
January 1	**4,182**	**4,072**	**3,742**
Provisions related to discontinuing operations	(234)		
Impact of business combinations			174
Additions	14,119	13,095	12,150
Payments/utilizations	(13,907)	(12,762)	(11,938)
Changes in offset against gross trade receivables	(420)	(224)	(90)
Currency translation effects	(207)	1	34
December 31	**3,533**	**4,182**	**4,072**

22. Provisions and Other Current Liabilities (Continued)

Restructuring Provision Movements

	$ m
January 1, 2012	**349**
Additions	281
Cash payments	(299)
Releases	(115)
Currency translation effects	5
December 31, 2012	**221**
Additions	175
Cash payments	(134)
Releases	(47)
Transfer	(42)
Currency translation effects	1
December 31, 2013	**174**
Provisions related to discontinuing operations	(4)
Additions	504
Cash payments	(295)
Releases	(52)
Currency translation effects	6
December 31, 2014	**333**

In 2014, additions to provisions of $504 million in continuing operations were mainly related to reorganizations in the Pharmaceuticals Division. In Pharmaceuticals an initiative in Development totaling $72 million was targeted at establishing an organizational model for the development activities which allows for greater focus on high priority programs in specialty medicines, more flexibility to adapt to changes in the portfolio, and which strengthens operational excellence. Activities in General Medicines were also subject to a restructuring program totaling $286 million which was targeted at increasing operational leverage. Alcon has established a $56 million initiative to realize productivity opportunities.

In 2013, additions to provisions of $175 million in the Group were mainly related to reorganizations of the Pharmaceuticals research and development activities and the integration of Alcon.

In 2012, additions to provisions of $281 million were incurred in the Pharmaceuticals Division Marketing & Sales organization in conjunction with the anticipation of patent expirations; in Alcon as a result of continuous integration and in Sandoz due to the integration of the acquired company Fougera. Other Group initiatives to further simplify the organization were mainly related to Consumer Health and Sandoz.

22. Provisions and Other Current Liabilities (Continued)

The releases to income in 2014 of $52 million in continuing operations and $5 million in discontinuing operations, respectively, in 2013 of $47 million and in 2012 of $115 million, for the entire Group, were mainly due to settlement of liabilities at lower amounts than originally anticipated.

	Third party costs[1]		Termination costs		Additions to provision	
Restructuring initiatives	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**
	$ m	**$ m**	**$ m**	**$ m**	**$ m**	**$ m**
Pharmaceuticals—Research & Development		35	72	25	72	60
Pharmaceuticals—General Medicines	8		278		286	
Alcon initiative to increase operating leverage			56		56	
Various Group initiatives to simplify organizational structure—including manufacturing sites	1	8	89	30	90	38
Pharmaceuticals—Marketing & Sales organization		2		20	0	22
Alcon integration		1		53		54
Fougera integration				1		1
Total	**9**	**46**	**495**	**129**	**504**	**175**

[1] Third party costs are mainly associated with lease and other obligations due to abandonment of certain facilities.

23. Details to the Consolidated Cash Flow Statements

23.1) Adjustments for Non-Cash Items from Continuing Operations

	2014	2013	2012
	$ m	**$ m**	**$ m**
Taxes	1,545	1,498	1,706
Depreciation, amortization and impairments on			
Property, plant & equipment	1,630	1,601	1,549
Intangible assets	3,052	2,804	2,893
Financial assets[1]	69	57	33
Income from associated companies	(1,918)	(599)	(549)
Gains on disposal of property, plant & equipment, intangible, financial and other non-current assets, net	(622)	(347)	(256)
Equity-settled compensation expense	744	654	679
Change in provisions and other non-current liabilities	1,490	736	791
Net financial income	735	775	820
Total	**6,725**	**7,179**	**7,666**

[1] Including fair value gains

23. Details to the Consolidated Cash Flow Statements (Continued)

23.2) Cash Flows from Changes in Working Capital and Other Operating Items Included in Operating Cash Flow from Continuing Operations

	2014	2013	2012
	$ m	$ m	$ m
(Increase) in inventories	(506)	(454)	(656)
(Increase)/decrease in trade receivables	(367)	(548)	215
Increase in trade payables	142	414	523
Change in other net current assets and other operating cash flow items	106	(190)	(247)
Total	**(625)**	**(778)**	**(165)**

23.3) Cash Flow Arising from Acquisitions and Divestments of Businesses

The following is a summary of the cash flow impact of those significant transactions described in Note 2:

	2014 Acquisitions	2014 Divestments	2012 Acquisitions
	$ m	$ m	$ m
Property, plant & equipment		145	(126)
Currently marketed products	(234)	91	(521)
Acquired research & development	(248)		(173)
Technologies			(371)
Financial and other assets including deferred tax assets[1]	(53)	7	(165)
Inventories	(1)	87	(88)
Trade receivables and other current assets	(3)	159	(90)
Cash and cash equivalents	(2)		(167)
Current and non-current financial debts			4
Trade payables and other liabilities including deferred tax liabilities	186	(50)	747
Net identifiable assets acquired or divested	**(355)**	**439**	**(950)**
Currency translation effect		(3)	
Acquired liquidity	2		167
Non-controlling interest			29
Fair value of previously held equity interests			22
Sub-total	**(353)**	**436**	**(732)**
Goodwill[1]	(131)	267	(1,026)
Divestment gain		876	
Taxes paid and other portfolio transformation related payments		(566)	
Contingent consideration	153		17
Prepaid/deferred portion of sales price[2]		47	
Net cash flow	**(331)**	**1,060**	**(1,741)**
Of which:			
Net cash flow from discontinuing operations		1,060	
Net cash flow used in continuing operations	(331)		(1,741)

(1) 2014 Acquisitions includes an adjustment regarding a previous acquisition to deferred tax assets of $21 million and goodwill of $135 million.

(2) Includes $49 m prepaid proceeds for the divestment of the Animal Health business

23. Details to the Consolidated Cash Flow Statements (Continued)

There were no significant acquisitions or divestments which had an impact on the cash flow statement in 2013, however $42 million were paid for contingent considerations regarding acquisitions from previous years.

Notes 2 and 24 provide further information regarding acquisitions and divestments of businesses. All acquisitions were for cash.

23.4) Cash Flow from Discontinuing Operations

	2014	2013	2012
	$ m	$ m	$ m
Cash flows used in/from operating activities	**(1)**	**557**	**384**
Purchase of property, plant & equipment	(223)	(161)	(240)
Proceeds from sales of property, plant & equipment	4	12	10
Purchase of intangible assets	(18)	(32)	(56)
Proceeds from sales of intangible assets	79	58	46
Purchase of financial and other non-current assets, net	(13)	(10)	(12)
Divestments of businesses	1,060		
Cash flows from/used in investing activities	**889**	**(133)**	**(252)**
Total net cash flows from discontinuing operations	**888**	**424**	**132**

24. Acquisitions of Businesses (Continued)

Assets and Liabilities Arising from Acquisitions

Fair value	2014	2012
	$ m	$ m
Property, plant & equipment		126
Currently marketed products	234	521
Acquired research & development	248	173
Technologies		371
Deferred tax assets[1]	53	165
Inventories	1	88
Trade receivables and other current assets	3	90
Cash and cash equivalents	2	167
Current and non-current financial debts		(4)
Trade payables and other liabilities including deferred tax liabilities	(186)	(747)
Net identifiable assets acquired	**355**	**950**
Acquired liquidity	(2)	(167)
Non-controlling interest		(29)
Goodwill[1]	131	1,026
Net assets recognized as a result of business combinations	**484**	**1,780**

(1) 2014 includes an adjustment regarding a previous acquisition to deferred tax assets of $21 million and goodwill of $135 million.

Note 2 details significant acquisition of businesses, which in 2014, were CoStim Pharmaceuticals and WaveTec. The goodwill arising out of these acquisitions is principally attributable to buyer specific synergies and to the accounting for deferred taxes on the acquired net assets.

There were no significant acquisitions in 2013.

In 2012, goodwill arising out of the acquisitions reflects mainly the value of future products and the acquired assembled workforce.

25. Post-Employment Benefits for Associates

Defined Benefit Plans

In addition to the legally required social security schemes, the Group has numerous independent pension and other post-employment benefit plans. In most cases these plans are externally funded in entities which are legally separate from the Group. For certain Group companies, however, no independent plan assets exist for the pension and other post-employment benefit obligations of associates. In these cases the related unfunded liability is included in the balance sheet. The defined benefit obligations (DBO) of all major pension and other post-employment benefit plans are reappraised annually by independent actuaries. Plan assets are recognized at fair value. The major plans are based in Switzerland, United States, United Kingdom, Germany and Japan, which represent 95% of the Group's total DBO for pension plans for continuing operations. Details of the plans in the two most significant countries of Switzerland and the US are provided below.

25. Post-Employment Benefits for Associates (Continued)

Swiss-based pension plans represent the most significant portion of the Group's total DBO and plan assets. For the active insured members born on or after January 1, 1956, or having joined the plans after December 31, 2010 the benefits are partially linked to the contributions paid into the plan. Certain features of Swiss pension plans required by law preclude the plans being categorized as defined contribution plans. These factors include a minimum interest guarantee on retirement savings accounts, a pre-determined factor for converting the accumulated savings account balance into a pension and embedded death and disability benefits.

All benefits granted under Swiss pension plans are vested and Swiss legislation prescribes that the employer has to contribute a fixed percentage of an associate's pay to an external pension fund. Additional employer's contributions may be required whenever the plan's statutory funding ratio falls below a certain level. The associate also contributes to the plan. The pension plans are run by separate legal entities, each governed by a Board of Trustees which for the principal plans consists of representatives nominated by Novartis and by the active insured associates. The Boards of Trustees are responsible for the plan design and the asset investment strategy.

The US pension plans represent the second largest component of the Group's total DBO and plan assets. The principal plans (Qualified Plans) are funded whereas plans providing additional benefits for executives (Restoration Plans) are unfunded. Employer contributions are required for Qualified Plans whenever the statutory funding ratio falls below a certain level. Furthermore, associates in the US are covered under other post-employment benefit plans and post-retirement medical plans.

25. Post-Employment Benefits for Associates (Continued)

The following tables are a summary of the funded and unfunded defined benefit obligation for pension and other post-employment benefit plans of associates at December 31, 2014 and 2013:

	Pension plans		Other post-employment benefit plans	
	2014	2013	2014	2013
	$ m	$ m	$ m	$ m
Benefit obligation at January 1	**24,801**	**25,503**	**1,069**	**1,271**
Benefit obligations related to discontinuing operations	(848)		(21)	
Current service cost	418	478	35	48
Interest cost	654	580	49	46
Past service costs and settlements	6	(66)	(89)	(73)
Administrative expenses	21	18		
Remeasurement losses/(gains) arising from changes in financial assumptions	2,129	(1,248)	164	(131)
Remeasurement losses/(gains) arising from changes in demographic assumptions	229	(60)	121	(7)
Experience related remeasurement (gains)/losses	(14)	160	(22)	(19)
Currency translation effects	(2,156)	442	(5)	(6)
Benefit payments	(1,282)	(1,240)	(48)	(60)
Contributions of associates	210	221		
Effect of acquisitions, divestments or transfers	10	13		
Benefit obligation at December 31	**24,178**	**24,801**	**1,253**	**1,069**
Fair value of plan assets at January 1	**21,481**	**20,282**	**209**	**237**
Plan assets related to discontinuing operations	(530)			
Interest income	550	438	10	8
Return on plan assets excluding interest income	1,442	850	28	6
Currency translation effects	(1,917)	383		
Novartis Group contributions	485	560		18
Contributions of associates	210	221		
Settlements	(9)	(14)		
Benefit payments	(1,282)	(1,240)	(48)	(60)
Effect of acquisitions, divestments or transfers	4	1		
Fair value of plan assets at December 31	**20,434**	**21,481**	**199**	**209**
Funded status	**(3,744)**	**(3,320)**	**(1,054)**	**(860)**
Limitation on recognition of fund surplus at January 1	**(45)**	**(21)**		
Change in limitation on recognition of fund surplus (incl. exchange rate differences)	(9)	(21)		
Interest income on limitation of fund surplus	(4)	(3)		
Limitation on recognition of fund surplus at December 31	**(58)**	**(45)**		
Net liability in the balance sheet at December 31	**(3,802)**	**(3,365)**	**(1,054)**	**(860)**

25. Post-Employment Benefits for Associates (Continued)

The reconciliation of the net liability from January 1 to December 31 is as follows:

	Pension plans		Other post-employment benefit plans	
	2014	2013	2014	2013
	$ m	$ m	$ m	$ m
Net liability at January 1	**(3,365)**	**(5,242)**	**(860)**	**(1,034)**
Less: Net liability related to discontinuing operations	318		21	
Current service cost	(418)	(478)	(35)	(48)
Net interest expense	(108)	(145)	(39)	(38)
Administrative expenses	(21)	(18)		
Past service costs and settlements	(15)	52	89	73
Remeasurements	(902)	1,998	(235)	163
Currency translation effects	239	(59)	5	6
Novartis Group contributions	485	560		18
Effect of acquisitions, divestments or transfers	(6)	(12)		
Change in limitation on recognition of fund surplus	(9)	(21)		
Net liability at December 31	**(3,802)**	**(3,365)**	**(1,054)**	**(860)**
Amounts recognized in the consolidated balance sheet				
Prepaid benefit cost	37	42		
Accrued benefit liability	(3,839)	(3,407)	(1,054)	(860)

The following table shows a breakdown of the DBO for pension plans by geography and type of member and the breakdown of plan assets into the geographical locations in which they are held.

	2014 $ m				2013 $ m			
	Switzerland	US	Rest of the World	Total	Switzerland	US	Rest of the World	Total
Benefit obligation at December 31	**15,578**	**4,092**	**4,508**	**24,178**	**16,683**	**3,430**	**4,688**	**24,801**
Thereof unfunded		*820*	*484*	*1,304*		*685*	*522*	*1,207*
Analysed by type of member								
Active	6,268	1,182	1,502	8,952	6,617	1,087	1,634	9,338
Deferred pensioners		947	1,499	2,446		757	1,427	2,184
Pensioners	9,310	1,963	1,507	12,780	10,066	1,586	1,627	13,279
Fair value of plan assets at December 31	**14,869**	**2,521**	**3,044**	**20,434**	**15,873**	**2,460**	**3,148**	**21,481**
Funded Status	**(709)**	**(1,571)**	**(1,464)**	**(3,744)**	**(810)**	**(970)**	**(1,540)**	**(3,320)**

25. Post-Employment Benefits for Associates (Continued)

The following table shows the principal weighted average actuarial assumptions used for calculating defined benefit plans and other post-employment benefits of associates:

	Pension plans			Other post-employment benefit plans		
	2014	2013	2012	2014	2013	2012
	%	%	%	%	%	%
Weighted average assumptions used to determine benefit obligations at December 31						
Discount rate	1.8%	2.9%	2.4%	3.8%	4.7%	3.6%
Expected rate of pension increase	0.4%	1.1%	0.9%			
Expected rate of salary increase	3.2%	3.5%	3.3%			
Interest on savings account	0.9%	2.1%	1.6%			
Current average life expectancy for a 65-year-old male/female	21/24 years	21/23 years	21/23 years	22/24 years	19/21 years	19/21 years

Changes in the above-mentioned actuarial assumptions can result in significant volatility in the accounting for the Group's pension plans in the consolidated financial statements. This can result in substantial changes in the Group's other comprehensive income, long-term liabilities and prepaid pension assets.

The DBO is significantly impacted by assumptions regarding the rate that is used to discount the actuarially determined post-employment benefit liability. This rate is based on yields of high quality corporate bonds in the country of the plan. Decreasing corporate bond yields decrease the discount rate, so that the DBO increases and the funded status decreases.

In Switzerland an increase in the DBO due to lower discount rates is slightly offset by lower future benefits expected to be paid on the associate's savings account where the assumption on interest accrued changes in line with the discount rate.

The impact of decreasing interest rates on a plan's assets is more difficult to predict. A significant part of the plan assets is invested in bonds. Bond values usually rise when interest rates decrease and may therefore partially compensate for the decrease in the funded status. Furthermore, pension assets also include significant holdings of equity instruments. Share prices tend to rise when interest rates decrease and therefore often counteract the negative impact of the rising defined benefit obligation on the funded status although correlation of interest rates with equities is not as strong as with bonds, especially in the short term.

The expected rate for pension increases significantly affects the DBO of most plans in Switzerland, Germany and the United Kingdom. Such pension increases also decrease the funded status although there is no strong correlation between the value of the plan assets and pension/inflation increases.

Assumptions regarding life expectancy significantly impact the DBO. An increase in longevity increases the DBO. There is no offsetting impact from the plan assets as no longevity bonds or swaps are held by the pension funds. Generational mortality tables are used where this data is available.

25. Post-Employment Benefits for Associates (Continued)

The following table shows the sensitivity of the defined benefit pension obligation to the principal actuarial assumptions for the major plans in Switzerland, United States, United Kingdom, Germany and Japan on an aggregated basis:

	Change in 2014 year end defined benefit pension obligation
	$ m
25 basis point increase in discount rate	(760)
25 basis point decrease in discount rate	805
1 year increase in life expectancy	793
25 basis point increase in rate of pension increase	501
25 basis point decrease in rate of pension increase	(119)
25 basis point increase of interest on savings account	63
25 basis point decrease of interest on savings account	(63)
25 basis point increase in rate of salary increase	70
25 basis point decrease in rate of salary increase	(73)

The healthcare cost trend rate assumptions for other post-employment benefits are as follows:

Healthcare cost trend rate assumptions used	2014	2013	2012
Healthcare cost trend rate assumed for next year	7.0%	7.0%	7.1%
Rate to which the cost trend rate is assumed to decline	5.0%	5.0%	5.0%
Year that the rate reaches the ultimate trend rate	2021	2021	2020

The following table shows the weighted average plan asset allocation of funded defined benefit pension plans at December 31, 2014 and 2013:

	Pension plans		
	Long-term target	2014	2013
	%	%	%
Equity securities	15–40	35	39
Debt securities	20–60	34	32
Real estate	5–20	13	13
Alternative investments	0–20	10	10
Cash and other investments	0–15	8	6
Total		**100**	**100**

Cash, as well as most of the equity and debt securities have a quoted market price in an active market. Real estate and alternative investments, which include hedge fund and private equity investments usually do not have a quoted market price.

25. Post-Employment Benefits for Associates (Continued)

The strategic allocation of assets of the different pension plans are determined with the objective of achieving an investment return which, together with the contributions paid by the Group and its associates, is sufficient to maintain reasonable control over the various funding risks of the plans. Based upon the market and economic environments, actual asset allocations may temporarily be permitted to deviate from policy targets. The asset allocation currently includes investments in shares of Novartis AG which totaled at December 31, 2014, 11 million shares with a market value of $1.0 billion (2013: 19.8 million shares with a market value of $1.6 billion). The weighted average duration of the defined benefit obligation is 14.3 years (2013: 13.8 years). The Group's ordinary contribution to the various pension plans are based on the rules of each plan. Additional contributions are made whenever this is required by statute or law; i.e. usually when statutory funding levels fall below pre-determined thresholds. The only significant plans that are foreseen to require additional funding are those in the UK.

The expected future cash flows in respect of pension and other post-employment benefit plans at December 31, 2014 were as follows:

	Pension plans	Other post-employment benefit plans
	$ m	$ m
Novartis Group contributions		
2015 (estimated)	540	58
Expected future benefit payments		
2015	1,227	58
2016	1,230	61
2017	1,240	64
2018	1,245	66
2019	1,239	69
2020-2024	6,121	371

Defined Contribution Plans

In many subsidiaries associates are covered by defined contribution plans. Contributions charged to the 2014 consolidated income statement for the defined contribution plans were $348 million (2013: $332 million, 2012: $327 million). The 2014 amount excludes $14 million (2013: $19 million, 2012: $18 million) related to discontinuing operations.

26. Equity-Based Participation Plans for Associates

The expense related to all equity-based participation plans in the 2014 consolidated income statement was $1.1 billion (2013: $987 million, 2012: $1.0 billion) resulting in total liabilities arising from equity-based payment transactions of $277 million (2013: $255 million) of which $248 million is recognized in continuing operations. Out of the total expense, an amount of $1.0 billion (2013: $892 million, 2012: $921 million) was recognized in continuing operations and $124 million (2013: $95 million, 2012: $82 million) was recognized in discontinuing operations.

Equity-based participation plans can be separated into the following plans.

26. Equity-Based Participation Plans for Associates (Continued)

Annual Incentive

The Annual Incentive of the CEO and other key executives is paid 50% in cash in March of the year following the performance period, and 50% in Novartis shares (or Restricted Share Units (RSUs)) that are deferred and restricted for three years. The executives may elect to also receive their cash incentive in shares.

Share Savings Plans

A number of associates in certain countries and certain key executives worldwide are encouraged to invest their Annual Incentive, and in the UK also their salary, in a share savings plan. Under the share savings plan, participants may elect to receive their Annual Incentive fully or partially in Novartis shares in lieu of cash. As a reward for their participation in the share savings plan, at no additional cost to the participant, Novartis matches their investments in shares after a holding period of three or five years.

Novartis currently has three share savings plans:

– Worldwide 27 key executives were invited to participate in the Leveraged Share Savings Plan (LSSP) based on their performance in 2013. At the participant's election, the Annual Incentive is awarded partly or entirely in shares. The elected number of shares was delivered in 2014 and is subject to a holding period of five years. At the end of the holding period, Novartis will match the invested shares at a ratio of 1-to-1 (i.e. one share awarded for each invested share). In the US both the LSSP award and the corresponding match are cash settled.

– In Switzerland, the Employee Share Ownership Plan (ESOP) was available to 13,742 associates in 2013. ESOP participants may choose to receive their Annual Incentive (i) 100% in shares, (ii) 50% in shares and 50% in cash or (iii) 100% in cash. After expiration of a three-year holding period for Novartis shares invested under the ESOP, each participant will receive one matching share for every two Novartis shares invested. A total of 6,324 associates chose to receive shares under the ESOP for their performance in 2013 and the invested shares were delivered in 2014.

– In the United Kingdom, 2,355 associates can invest up to 5% of their monthly salary in shares (up to a maximum of GBP 125) and also may be invited to invest all or part of their net Annual Incentive in shares. Two invested shares are matched with one share with a holding period of three years. During 2014, 1,497 participants elected to participate in this plan.

Following the introduction of the new compensation programs in 2014, the CEO and the other Executive Committee members are no longer eligible to participate in the share savings plans.

Associates may only participate in one of these plans in any given year.

During 2014, a total of 4.8 million shares (2013: 5.7 million shares) were granted to participants of these plans.

Novartis Equity Plan "Select"

The Equity Plan "Select" is a global equity incentive plan under which eligible associates, including Executive Committee members up to performance year 2013, may annually be awarded a grant under the plan. For certain associates the grant is subject to the achievement of predetermined business and individual performance objectives typically set at the start of the calendar year prior to the date of grant.

26. Equity-Based Participation Plans for Associates (Continued)

For these associates the Select award is capped at 200% of target. No awards are granted for performance ratings below a certain threshold.

The Equity Plan "Select" currently allows its participants in Switzerland to choose the form of their equity compensation in restricted shares or restricted share units (RSUs). In all other jurisdictions, RSU's are typically granted. Until 2013, participants could also choose to receive part or the entire grant in the form of tradable share options. The vesting period for the plan is three years.

Each RSU is equivalent in value to one Novartis share and is converted into one share at the vesting date. RSUs do not carry any voting or dividend rights. Each restricted share entitles the holder to voting rights and payment of dividends during the vesting period.

Tradable share options expire on their 10th anniversary from the grant date. Each tradable share option entitles the holder to purchase after vesting (and before the 10th anniversary from the grant date) one Novartis share at a stated exercise price that equals the closing market price of the underlying share at the grant date.

The terms and conditions of the Novartis Equity Plan "Select" outside North America are substantially equivalent to the Novartis Equity Plan "Select" for North America. Share options of the Novartis Equity Plan "Select" for North America have only been tradable since 2004.

Novartis Equity Plan "Select" outside North America

Participants in this plan were granted in 2014 a total of 2.1 million restricted shares and RSUs at CHF 73.75 (2013: 2.1 million restricted shares and RSUs at CHF 61.70).

The following table shows the assumptions used for the valuation of the share options granted for the last time in 2013:

	Novartis Equity Plan "Select" outside North America
Valuation date	January 17, 2013
Expiration date	January 17, 2023
Closing share price on grant date	CHF 61.70
Exercise price	CHF 61.70
Implied bid volatility	13.40%
Expected dividend yield	4.64%
Interest rate	0.94%
Market value of option at grant date	CHF 4.28

The following table shows the activity associated with the share options during the period. The weighted average prices in the table below are translated from Swiss Francs into $ at historical rates for

26. Equity-Based Participation Plans for Associates (Continued)

the granted, sold, and forfeited or expired options. The year-end prices are translated using the corresponding year-end rates.

	2014		2013	
	Options	Weighted average exercise price	Options	Weighted average exercise price
	(millions)	($)	(millions)	($)
Options outstanding at January 1	**26.4**	**57.3**	**33.2**	**54.5**
Granted	0.0	0.0	5.6	66.0
Sold	(9.8)	54.0	(12.1)	53.6
Forfeited or expired	(0.5)	62.2	(0.3)	60.1
Outstanding at December 31	**16.1**	**59.2**	**26.4**	**57.3**
Exercisable at December 31	**7.0**	**55.0**	**16.8**	**54.4**

All share options were granted at an exercise price which was equal to the closing market price of the Group's shares at the grant date. The weighted average exercise price during the period the options were sold in 2014 was $54.0. The weighted average share price at the dates of sale was $78.4.

The following table summarizes information about share options outstanding at December 31, 2014:

	Options outstanding		
Range of exercice prices ($)	Number outstanding	Average remaining contractual life	Weighted average exercise price
	(millions)	(years)	($)
45–49	1.2	3.3	46.9
50–54	2.1	3.9	54.4
55–59	7.6	5.5	57.8
60–65	5.2	8.0	66.0
Total	**16.1**	**5.9**	**59.2**

Novartis Equity Plan "Select" for North America

Participants in this plan were granted a total of 5.1 million RSUs at $80.79 (2013: 4.7 million RSUs at $66.07).

26. Equity-Based Participation Plans for Associates (Continued)

The following table shows the assumptions used for the valuation of the ADR options granted for the last time in 2013:

	Novartis Equity Plan "Select" for North America
Valuation date	January 17, 2013
Expiration date	January 17, 2023
Closing ADR price on grant date	$66.07
Exercise price	$66.07
Implied bid volatility	11.60%
Expected dividend yield	4.65%
Interest rate	1.96%
Market value of option at grant date	$4.37

The following table shows the activity associated with the ADR options during the period:

	2014		2013	
	ADR options	Weighted average exercise price	ADR options	Weighted average exercise price
	(millions)	($)	(millions)	($)
Options outstanding at January 1	**58.8**	**58.9**	**56.3**	**55.1**
Granted	0.0	0.0	18.6	66.1
Sold or exercised	(12.2)	55.5	(13.3)	52.5
Forfeited or expired	(2.2)	62.6	(2.8)	60.3
Outstanding at December 31	**44.4**	**59.6**	**58.8**	**58.9**
Exercisable at December 31	**16.3**	**54.7**	**17.8**	**53.2**

All ADR options were granted at an exercise price which was equal to the closing market price of the American Depositary Receipts (ADRs) at the grant date. The weighted average exercise price during the period the ADR options were sold or exercised in 2014 was $55.5. The weighted average ADR price at the dates of sale or exercise was $85.6.

26. Equity-Based Participation Plans for Associates (Continued)

The following table summarizes information about ADR options outstanding at December 31, 2014:

	ADR options outstanding		
Range of exercice prices ($)	**Number outstanding**	**Average remaining contractual life**	**Weighted average exercise price**
	(millions)	**(years)**	**($)**
45–49	3.3	3.5	46.6
50–54	4.3	4.3	53.9
55–59	21.3	6.2	58.1
65–69	15.5	8.0	66.1
Total	**44.4**	**6.4**	**59.6**

Long-Term Performance Plans

From 2014 onwards, a new LTPP was introduced which is designed to not only drive long-term shareholder value, but also innovation. It is available to the CEO and other key executives, who are no longer participating in the OLTPP described below. The rewards are based on rolling three year global performance objectives focused on financial and innovation measures. For the Executive Committee members and certain other key executives who participate in the LTPP introduced in 2014, the financial measure is Novartis Cash Value Added (NCVA). The weighting of this measure is 75% for this LTPP introduced in 2014. Three-year forward-looking targets are set at the beginning of the performance cycle by the Board of Directors. The performance ratio of a plan cycle is obtained right after the end of the third plan year by dividing the performance realization for the plan cycle by the performance target for the plan cycle and expressing the result as a percentage.

The innovation measure is based on a holistic approach under which three-year forward looking divisional innovation targets are set at the beginning of the cycle, comprised of five to ten target milestones that represent the most important research and development project milestones for each division. At the end of the performance period, the Compensation Committee will consider the achievement on both a qualitative and quantitative basis, taking into account the difficulty of each milestone. The weighting of this measure is 25% within this LTPP introduced in 2014.

The old Long-Term Performance Plan (OLTPP) was also granted to other selected key executives who are not eligible for the LTPP described above, who are in key positions and have a significant impact on the long-term success of Novartis. It is capped at 200% of target. The rewards are based on rolling three year global performance objectives focused on the Novartis Economic Value Added (NVA) measured annually. The NVA is calculated based on Group operating income and income from associated companies adjusted for interest, taxes and cost of capital charge. The performance realization of a plan cycle is obtained right after the end of the third plan year by adding together the annual NVA realizations of all plan years of the plan cycle. The performance ratio for a plan cycle is obtained by dividing the performance realization for the plan cycle with the performance target for the plan cycle, expressing the result as a percentage. The OLTPP only allows a payout if the actual NVA exceeds predetermined target thresholds.

26. Equity-Based Participation Plans for Associates (Continued)

Under both the old and the new LTPP plan, participants are granted a target number of Performance Share Units (PSUs) at the beginning of every performance period, which are converted into Novartis shares after the performance period.

At the end of the three-year performance period, the Compensation Committee adjusts the target number of PSUs earned based on actual performance. PSUs are converted into unrestricted Novartis shares without an additional vesting period. In the United States, awards may also be delivered in cash under the United States deferred compensation plan.

In 2014, 0.3 million LTPP PSUs based on achieving 100% of target were granted to 14 key executives. In the same year 0.2 million OLTPP PSUs (2013: 0.4 million OLTPP PSUs) based on achieving 100% of target were granted to 119 key executives.

Long-Term Relative Performance Plan (LTRPP)

The Long-Term Relative Performance Plan, was introduced in 2014, and is an equity plan for the CEO and other key executives. The target incentive is 100% of base compensation for the CEO. For other key executives, the LTRPP represents between 10% and 23% of their total variable compensation at target. It is capped at 200% of target. LTRPP is based on the achievement of long-term Group Total Shareholder Return (TSR) versus our peer group of 12 companies in the healthcare industry over rolling three-year performance periods. TSR is calculated in $ as share price growth plus dividends over the three-year performance period. The calculation will be based on Bloomberg standard published TSR data, which is publicly available. The position in the peer group determines the payout range.

The fair value of the LTRPP award was determined to be CHF 62.59 and $68.56 as of the grant date. In 2014, a total of 0.1 million LTRPP PSUs based on achieving 100% of target were granted to 14 executives.

Other Share Awards

Selected associates, excluding the Executive Committee members, may exceptionally receive Special Share Awards of restricted shares or RSUs. These Special Share Awards provide an opportunity to reward outstanding achievements or exceptional performance and aim at retaining key contributors. They are based on a formal internal selection process, in which the individual performance of each candidate is thoroughly assessed at several management levels. Special Share Awards generally have a five-year vesting period. In exceptional circumstances, Special Share Awards may be rewarded to attract special expertise and new talents into the organization. These grants are consistent with market practice and Novartis' philosophy to attract, retain and motivate best-in-class talents around the world.

Worldwide 455 associates at different levels in the organization were awarded restricted shares in 2014. During 2014, a total of 0.8 million restricted shares and RSUs (2013: 0.8 million restricted shares and RSUs) were granted to executives and selected associates.

In addition, in 2014, Board members received 20,643 unrestricted shares as part of their regular compensation.

26. Equity-Based Participation Plans for Associates (Continued)

Summary of Non-Vested Share Movements

The table below provides a summary of non-vested share movements (restricted shares, RSUs and ADRs) for all plans:

	2014		2013	
	Number of shares in millions	Fair value in $ m	Number of shares in millions	Fair value in $ m
Non-vested shares at January 1	**23.1**	**1,370.6**	**23.7**	**1,329.7**
Granted	14.5	1,153.4	14.8	932.2
Vested	(11.5)	(709.2)	(13.4)	(776.9)
Forfeited	(1.9)	(112.3)	(2.0)	(114.4)
Non-vested shares at December 31	**24.2**	**1,702.5**	**23.1**	**1,370.6**

Alcon, Inc., Equity Plans Granted to Associates Prior to the Merger

At the completion of the merger of Alcon, Inc., into Novartis on April 8, 2011, all awards outstanding under the Alcon equity plans were converted into awards based upon Novartis shares with a conversion factor of 3.0727 as defined in the Merger Agreement. There were no grants in 2014 and 2013 although certain of the unvested awards under the Alcon equity plans continued to have an expense in 2014.

Share Options and Share-Settled Appreciation Rights

Share options entitle the recipient to purchase Novartis shares at the closing market price of the former Alcon, Inc., share on the day of grant divided by the conversion factor.

Share-settled appreciation rights (SSAR) entitle the participant to receive, in the form of Novartis shares, the difference between the values of the former Alcon, Inc., share at the date of grant, converted into Novartis shares using the conversion factor, and the Novartis share price at the date of exercise.

26. Equity-Based Participation Plans for Associates (Continued)

The following table shows the activity associated with the converted Novartis share options and SSARs during 2014 and 2013:

	Number of options	Weighted average exercise price	Number of SSARs	Weighted average exercise price
	(millions)	($)	(millions)	($)
Outstanding at January 1, 2013	**2.0**	**26.7**	**3.8**	**36.3**
Exercised	(0.8)	25.1	(0.7)	36.6
Outstanding at December 31, 2013	**1.2**	**27.7**	**3.1**	**36.3**
Exercisable at December 31, 2013	**1.2**	**27.7**	**3.1**	**36.3**
Outstanding at January 1, 2014	**1.2**	**27.7**	**3.1**	**36.3**
Exercised	(0.5)	24.4	(0.7)	38.7
Outstanding at December 31, 2014	**0.7**	**30.1**	**2.4**	**35.6**
Exercisable at December 31, 2014	**0.7**	**30.1**	**2.4**	**35.6**

27. Transactions with Related Parties

Genentech/Roche

Novartis has two agreements with Genentech, Inc., USA, a subsidiary of Roche Holding AG which is indirectly included in the consolidated financial statements using equity accounting since Novartis holds 33.3% of the outstanding voting shares of Roche.

Lucentis

Novartis has licensed the exclusive rights to develop and market *Lucentis* outside the United States for indications related to diseases of the eye. As part of this agreement, Novartis paid Genentech/Roche an initial milestone and shared the cost for the subsequent development by making additional milestone payments upon the achievement of certain clinical development points and product approval. Novartis also pays royalties on the net sales of *Lucentis* products outside the United States. In 2014, *Lucentis* sales of $2.4 billion (2013: $2.4 billion, 2012: $2.4 billion) have been recognized by Novartis.

Xolair

In February 2004, Novartis Pharma AG, Genentech, Inc., and Tanox, Inc., finalized a three-party collaboration to govern the development and commercialization of certain anti-IgE antibodies including *Xolair* and TNX-901. Under this agreement, all three parties co-developed *Xolair*. On August 2, 2007, Genentech, Inc. completed the acquisition of Tanox, Inc. and has taken over its rights and obligations. Novartis and Genentech/Roche are co-promoting *Xolair* in the United States where Genentech/Roche records all sales. Novartis records sales outside of the United States.

27. Transactions with Related Parties (Continued)

Novartis markets *Xolair* and records all sales and related costs outside the United States as well as co-promotion costs in the United States. Genentech/Roche and Novartis share the resulting profits from sales in the United States, Europe and other countries, according to agreed profit-sharing percentages. In 2014, Novartis recognized total sales of *Xolair* of $777 million (2013: $613 million, 2012: $504 million) including sales to them for the United States market.

The net expense for royalties, cost sharing and profit sharing arising out of the *Lucentis* and *Xolair* agreements with Genentech/Roche totaled $536 million in 2014 (2013: $570 million, 2012: $514 million).

Furthermore, Novartis has several patent license, supply and distribution agreements with Roche. Novartis entities held no Roche bonds at December 31, 2014 (2013: none, 2012: $20 million).

Executive Officer and Non-Executive Director Compensation

During 2014, there were 14 Executive Committee members ("Executive officers"), including those who stepped down during the year (12 members also including those who stepped down in 2013 and 2012).

The total compensation for members of the Executive Committee and the 14 Non-Executive Directors (15 in 2013, 12 in 2012) using the Group's accounting policies for equity-based compensation and pension benefits was as follows:

	Executive Officers			Non-Executive Directors			Total		
	2014	2013	2012	2014	2013	2012	2014	2013	2012
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Benefits other than equity-based amounts	18.3	16.0	14.2	6.2	8.6	8.1	24.5	24.6	22.3
Post-employment benefits	2.1	1.9	2.1	0.1	1.4	0.2	2.2	3.3	2.3
Termination benefits		4.0	2.2					4.0	2.2
Equity-based compensation	81.7	46.5	54.5	4.9	5.7	16.4	86.6	52.2	70.9
Total	**102.1**	**68.4**	**73.0**	**11.2**	**15.7**	**24.7**	**113.3**	**84.1**	**97.7**

During 2014, there was an increase in the IFRS expense, compared to 2013, for equity-based compensation for Executive Committee members principally due to the following factors:

- In the year, certain Executive Committee members either retired or met the early retirement conditions resulting in an accelerated expense under IFRS, in accordance with the relevant plan terms.
- There was a net increase in the number of Executive Committee members; higher equity-based compensation expense for prior year grants not yet fully vested; and the expense relating to the loss of equity-based entitlements from a previous employer.

The annual incentive award, which is fully included in equity-based compensation even when paid out in cash, is granted in January in the year following the reporting period.

27. Transactions with Related Parties (Continued)

Transactions with Former Members of the Board of Directors

During 2014, no payments (or waivers of claims) were made to former Board members or to "persons closely" linked to them, except for the following amounts:

Dr. Alex Krauer, Honorary Chairman, is entitled to an amount of CHF 60,000 for annual periods from one AGM to the next. This amount was fixed in 1998 upon his departure from the Board in 1999, and has not been revised since that date. Due to a change in the timing of payments, an amount of CHF 45,000 was paid to Dr. Krauer, during 2014.

In 2014, an amount of CHF 330,645 ($363,552) was paid to Dr. Daniel Vasella, Honorary Chairman for 14 days of coaching of high-potential associates and for being a member of the local Novartis Boards in France and Spain under an agreement which became effective on November 1, 2013 and will last until the end of 2016. Dr. Vasella is compensated at a rate of $25,000 per day, with an annual guaranteed minimum fee of $250,000 for each of the calendar years 2014, 2015 and 2016. This amount was determined by decision of the Board of Directors, taking into consideration the compensation practices of other large companies when retired Chairmen or CEOs were retained in consulting agreements after leaving the board of directors.

In 2013, Dr. Vasella received a total amount of CHF 5.1 million from the date of the AGM, when he stepped down as Chairman and Board member, to December 31, 2013.

In 2014, Dr. Vasella exercised an option to acquire, at a future date, real estate in Risch, Zug, Switzerland from a consolidated entity for a price corresponding to the average of two independent external valuation reports. Novartis considers this transaction as not financially material. During 2014, Dr. Vasella acquired an asset for CHF 2.0 million from a consolidated entity. The transaction price was at a value matching the best of the offers for the asset received in an open bidding process from unrelated third parties.

The disclosures made related to Dr. Vasella are made on a voluntary basis.

28. Commitments and Contingencies

Leasing Commitments

The Group has entered into various fixed term operational leases, mainly for cars and real estate. As of December 31, 2014 the Group's commitments with respect to these leases, including estimated payment dates, were as follows:

	2014
	$ m
2015	273
2016	200
2017	145
2018	99
2019	77
Thereafter	1,978
Total	**2,772**
Expense of current year	**344**

28. Commitments and Contingencies (Continued)

Research & Development Commitments

The Group has entered into long-term research agreements with various institutions which provide for potential milestone payments and other payments by Novartis that may be capitalized. As of December 31, 2014 the Group's commitments to make payments under those agreements, and their estimated timing, were as follows:

	Unconditional commitments	Potential milestone payments	Total 2014
	$ m	$ m	$ m
2015	93	459	552
2016	72	250	322
2017	48	366	414
2018	37	205	242
2019	36	488	524
Thereafter	23	439	462
Total	**309**	**2,207**	**2,516**

Other Commitments

The Novartis Group entered into various purchase commitments for services and materials as well as for equipment in the ordinary course of business. These commitments are generally entered into at current market prices and reflect normal business operations.

Contingencies

Group companies have to observe the laws, government orders and regulations of the country in which they operate.

The Group's potential environmental remediation liability is assessed based on a risk assessment and investigation of the various sites identified by the Group as at risk for environmental remediation exposure. The Group's future remediation expenses are affected by a number of uncertainties. These uncertainties include, but are not limited to, the method and extent of remediation, the percentage of material attributable to the Group at the remediation sites relative to that attributable to other parties, and the financial capabilities of the other potentially responsible parties.

A number of Group companies are currently involved in administrative proceedings, litigations and investigations arising out of the normal conduct of their business. These litigations include product liabilities, governmental investigations and other legal matters. Whilst provisions have been made for probable losses that management deems to be reasonable or appropriate there are uncertainties connected with these estimates.

Note 20 contains a more extensive discussion of these matters.

In the opinion of management, however, the outcome of these actions will not materially affect the Group's financial position but could be material to the results of operations or cash flow in a given period.

29. Financial Instruments—Additional Disclosures

	Note	2014[1]	2013[1]
		$ m	$ m
Cash and cash equivalents	16	**13,023**	**6,687**
Financial assets—measured at fair value through other comprehensive income			
Available-for-sale marketable securities			
Debt securities	16	327	323
Equity securities	16	15	47
Fund investments	16	35	11
Total available-for-sale marketable securities		**377**	**381**
Available-for-sale long-term financial investments			
Equity securities	13	937	824
Fund investments	13	71	52
Total available-for-sale long-term financial investments		**1,008**	**876**
Total financial assets—measured at fair value through other comprehensive income		**1,385**	**1,257**
Financial assets—measured at amortized costs			
Trade receivables and other current assets (excluding pre-payments)	15/17	10,255	12,623
Accrued interest on debt securities and time deposits	16	3	5
Time deposits with original maturity more than 90 days	16	6	1,931
Long-term loans and receivables from customers and finance leases, advances, security deposits	13	712	647
Total financial assets—measured at amortized costs		**10,976**	**15,206**
Financial assets—measured at fair value through the consolidated income statement			
Associated companies at fair value through profit and loss		234	
Derivative financial instruments	16	356	121
Total financial assets—measured at fair value through the consolidated income statement		**590**	**121**
Total financial assets		**25,974**	**23,271**
Financial liabilities—measured at amortized costs			
Current financial debt			
Interest bearing accounts of associates payable on demand	21	1,651	1,718
Bank and other financial debt	21	1,272	1,323
Commercial paper	21	648	1,042
Current portion of non-current debt	21	2,989	2,590
Total current financial debt		**6,560**	**6,673**
Non-current financial debt			
Straight bonds	19	15,982	12,909
Liabilities to banks and other financial institutions	19	803	919
Finance lease obligations	19	3	4
Current portion of non-current debt	19	(2,989)	(2,590)
Total non-current financial debt		**13,799**	**11,242**
Trade payables and commitment for repurchase of own shares (see Note 22)		**6,077**	**6,148**
Total financial liabilites—measured at amortized costs		**26,436**	**24,063**
Financial liabilities—measured at fair value through the consolidated income statement			
Contingent consideration	20/22	756	572
Derivative financial instruments	21	52	103
Total financial liabilities—measured at fair value through the consolidated income statement		**808**	**675**
Total financial liabilities		**27,244**	**24,738**

[1] Except for straight bonds (see Note 19) the carrying amount is a reasonable approximation of fair value.

29. Financial Instruments—Additional Disclosures (Continued)

Derivative Financial Instruments

The following tables show the contract or underlying principal amounts and fair values of derivative financial instruments analyzed by type of contract at December 31, 2014 and 2013. Contract or underlying principal amounts indicate the volume of business outstanding at the consolidated balance sheet date and do not represent amounts at risk. The fair values are determined by reference to market prices or standard pricing models that used observable market inputs at December 31, 2014 and 2013.

	Contract or underlying principal amount		Positive fair values		Negative fair values	
	2014	2013	2014	2013	2014	2013
	$ m	$ m	$ m	$ m	$ m	$ m
Currency related instruments						
Forward foreign exchange rate contracts	10,072	10,137	283	117	(52)	(100)
Over-the-Counter currency options	1,715	2,427	73	4		(3)
Total of currency related instruments	**11,787**	**12,564**	**356**	**121**	**(52)**	**(103)**
Total derivative financial instruments included in marketable securities and in current financial debts	**11,787**	**12,564**	**356**	**121**	**(52)**	**(103)**

The following table shows by currency contract or underlying principal amount the derivative financial instruments at December 31, 2014 and 2013:

December 31, 2014	EUR	$	JPY	Other	Total
	$ m	$ m	$ m	$ m	$ m
Currency related instruments					
Forward foreign exchange rate contracts	3,681	3,159	38	3,194	10,072
Over-the-Counter currency options	1,215	500			1,715
Total of currency related instruments	**4,896**	**3,659**	**38**	**3,194**	**11,787**
Total derivative financial instruments	**4,896**	**3,659**	**38**	**3,194**	**11,787**

December 31, 2013	EUR	$	JPY	Other	Total
	$ m	$ m	$ m	$ m	$ m
Currency related instruments					
Forward foreign exchange rate contracts	3,727	3,802	230	2,378	10,137
Over-the-Counter currency options	827	1,600			2,427
Total of currency related instruments	**4,554**	**5,402**	**230**	**2,378**	**12,564**
Total derivative financial instruments	**4,554**	**5,402**	**230**	**2,378**	**12,564**

Derivative financial instruments effective for hedge accounting purposes

At the end of 2014 and 2013 there were no open hedging instruments for anticipated transactions.

29. Financial Instruments—Additional Disclosures (Continued)

Fair value by hierarchy

As required by IFRS, financial assets and liabilities recorded at fair value in the consolidated financial statements are categorized based upon the level of judgment associated with the inputs used to measure their fair value. There are three hierarchical levels, based on an increasing amount of subjectivity associated with the inputs to derive fair valuation for these assets and liabilities, which are as follows:

The assets carried at Level 1 fair value are equity and debt securities listed in active markets.

The assets generally included in Level 2 fair value hierarchy are foreign exchange and interest rate derivatives and certain debt securities. Foreign exchange derivatives and interest rate derivatives are valued using corroborated market data. The liabilities generally included in this fair value hierarchy consist of foreign exchange and interest rate derivatives.

Level 3 inputs are unobservable for the asset or liability. The assets generally included in Level 3 fair value hierarchy are various investments in hedge funds and unquoted equity security investments. Contingent consideration carried at fair value is included in this category.

2014	Level 1	Level 2	Level 3	Valued at amortized cost	Total
	$ m	$ m	$ m	$ m	$ m
Debt securities	301	26			327
Equity securities	15				15
Fund investments	29		6		35
Total available-for-sale marketable securities	**345**	**26**	**6**		**377**
Time deposits with original maturity more than 90 days				6	6
Derivative financial instruments		356			356
Accrued interest on debt securities				3	3
Total marketable securities, time deposits and derivative financial instruments	**345**	**382**	**6**	**9**	**742**
Available-for-sale financial investments	605		332		937
Fund investments			71		71
Long-term loans and receivables from customers and finance leases, advances, security deposits				712	712
Total financial investments and long-term loans	**605**		**403**	**712**	**1,720**
Associated companies	66		168		234
Total associated companies at fair value through profit and loss	**66**		**168**		**234**
Contingent consideration			(756)		(756)
Derivative financial instruments		(52)			(52)
Total financial liabilities at fair value		**(52)**	**(756)**		**(808)**

29. Financial Instruments—Additional Disclosures (Continued)

2013	Level 1	Level 2	Level 3	Valued at amortized cost	Total
	$ m	$ m	$ m	$ m	$ m
Debt securities	294	29			323
Equity securities	21		26		47
Fund investments			11		11
Total available-for-sale marketable securities	**315**	**29**	**37**		**381**
Time deposits with original maturity more than 90 days				1,931	1,931
Derivative financial instruments		121			121
Accrued interest on debt securities				5	5
Total marketable securities, time deposits and derivative financial instruments	**315**	**150**	**37**	**1,936**	**2,438**
Available-for-sale financial investments	458		366		824
Fund investments			52		52
Long-term loans and receivables from customers and finance leases, advances, security deposits				647	647
Total financial investments and long-term loans	**458**		**418**	**647**	**1,523**
Contingent consideration			(572)		(572)
Derivative financial instruments		(103)			(103)
Total financial liabilities at fair value		**(103)**	**(572)**		**(675)**

The analysis above includes all financial instruments including those measured at amortized cost or at cost.

29. Financial Instruments—Additional Disclosures (Continued)

The change in carrying values associated with Level 3 financial instruments using significant unobservable inputs during the year ended December 31 are set forth below:

2014	Equity securities	Fund investments	Available-for-sale financial investments	Contingent consideration
	$ m	$ m	$ m	$ m
January 1	**26**	**63**	**366**	**572**
Fair value gains recognized in the consolidated income statement		2	17	51
Fair value losses (including impairments and amortizations) recognized in the consolidated income statement			(51)	(20)
Gains recognized in the consolidated statement of comprehensive income	3	3	7	
Purchases		7	140	153
Proceeds from sales		(9)	(23)	
Reclassification	(29)	16	(114)	
Currency translation effects		(5)	(10)	
December 31	**0**	**77**	**332**	**756**
Total of fair value gains and losses recognized in the consolidated income statement for assets and liabilities held at December 31, 2014		2	(34)	31

29. Financial Instruments—Additional Disclosures (Continued)

2013	Equity securities	Fund investments	Available-for-sale financial investments	Contingent consideration
	$ m	$ m	$ m	$ m
January 1	**23**	**36**	**359**	**573**
Fair value gains recognized in the consolidated income statement		3	32	(39)
Fair value losses (including impairments and amortizations) recognized in the consolidated income statement			(52)	81
Gains recognized in the consolidated statement of comprehensive income	3	4	25	
Purchases		7	86	
Payments				(43)
Proceeds from sales		(21)	(80)	
At equity investments reclassified due to loss of significant influence		33		
Reclassification			(6)	
Currency translation effects		1	2	
December 31	**26**	**63**	**366**	**572**
Total of fair value gains and losses recognized in the consolidated income statement for assets and liabilities held at December 31, 2013		3	(20)	42

No significant transfers from one level to the other occurred during the reporting period. Gains and losses associated with Level 3 available-for-sale marketable securities are recorded in the consolidated income statement under "Other financial income and expense" and gains and losses associated with Level 3 available-for-sale financial investments are recorded in the consolidated income statement under "Other expense" or "Other income", respectively.

If the pricing parameters for the Level 3 input were to change for equity securities and fund investments by 5% and for available-for-sale financial investments by 10% positively or negatively, respectively, this would change the amounts recorded in the consolidated statement of comprehensive income by $4 million or $33 million, respectively (2013: $4 million and $37 million).

For the determination of the fair value of a contingent consideration various unobservable inputs are used. A change in these inputs might result in a significantly higher or lower fair value measurement. The significance and usage of these inputs may vary amongst the existing contingent considerations due to differences in the triggering events for payments or in the nature of the asset the contingent consideration relates to. Amongst others, the probability of success, sales forecast and assumptions regarding the timing and different scenarios of triggering events are used. The inputs are interrelated.

29. Financial Instruments—Additional Disclosures (Continued)

Nature and Extent of Risks Arising From Financial Instruments

Market Risk

Novartis is exposed to market risk, primarily related to foreign currency exchange rates, interest rates and the market value of the investments of liquid funds. The Group actively monitors and seeks to reduce, where it deems it appropriate to do so, fluctuations in these exposures. It is the Group's policy and practice to enter into a variety of derivative financial instruments to manage the volatility of these exposures and to enhance the yield on the investment of liquid funds. It does not enter any financial transactions containing a risk that cannot be quantified at the time the transaction is concluded. In addition, it does not sell short assets it does not have, or does not know it will have, in the future. The Group only sells existing assets or enters into transactions and future transactions (in the case of anticipatory hedges) that it confidently expects it will have in the future, based on past experience. In the case of liquid funds, the Group writes call options on assets it has or it writes put options on positions it wants to acquire and has the liquidity to acquire. The Group expects that any loss in value for these instruments generally would be offset by increases in the value of the underlying transactions.

Foreign currency Exchange Rate Risk

The Group uses the $ as its reporting currency. As a result, the Group is exposed to foreign currency exchange movements, primarily in European, Japanese and emerging market currencies. Fluctuations in the exchange rates between the $ and other currencies can have a significant effect on both the Group's results of operations, including reported sales and earnings, as well as on the reported value of our assets, liabilities and cash flows. This in turn may significantly affect the comparability of period-to-period results of operations.

Because our expenditures in Swiss francs are significantly higher than our revenues in Swiss francs, volatility in the value of the Swiss franc can have a significant impact on the reported value of our earnings, assets and liabilities, and the timing and extent of such volatility can be difficult to predict. In addition, there is a risk that certain countries could take other steps which could significantly impact the value of their currencies. Such steps could include "quantitative easing" measures and potential withdrawals by countries from common currencies.

The Group is exposed to a potential adverse devaluation risk on its intercompany funding and total investment in certain subsidiaries operating in countries with exchange controls. The most significant country in this respect is Venezuela, where the Group has an equivalent of approximately $0.4 billion of cash in local currency, which is only slowly being approved for remittance outside of the country. As a result, the Group is exposed to a potential devaluation loss in the income statement on its total intercompany balances with its subsidiaries in Venezuela, which at December 31, 2014 amounted to $0.4 billion. The Group continues to use for the consolidation of the financial statements of its Venezuelan subsidiaries the official exchange rate of VEF 6.3/$, which is applied for health and food imports as published by the Centro Nacional de Comercio Exterior (CENCOEX, formerly CADIVI).

Novartis seeks to manage currency exposure by engaging in hedging transactions where management deems appropriate. We may enter into various contracts that reflect the changes in the value of foreign currency exchange rates to preserve the value of assets, commitments and anticipated transactions. Novartis also uses forward contracts and foreign currency option contracts to hedge certain anticipated transactions denominated in foreign currencies.

29. Financial Instruments—Additional Disclosures (Continued)

Net investments in subsidiaries in foreign countries are long-term investments. Their fair value changes through movements of foreign currency exchange rates. The Group only hedges the net investments in foreign subsidiaries in exceptional cases.

Commodity Price Risk

The Group has only a very limited exposure to price risk related to anticipated purchases of certain commodities used as raw materials by the Group's businesses. A change in those prices may alter the gross margin of a specific business, but generally by not more than 10% of the margin and thus below the Group's risk management tolerance levels. Accordingly, the Group does not enter into significant commodity futures, forward and option contracts to manage fluctuations in prices of anticipated purchases.

Interest Rate Risk

The Group addresses its net exposure to interest rate risk mainly through the ratio of its fixed rate financial debt to variable rate financial debt contained in its total financial debt portfolio. To manage this mix, Novartis may enter into interest rate swap agreements, in which it exchanges periodic payments based on a notional amount and agreed upon fixed and variable interest rates.

Equity Risk

The Group may purchase equities as investments of its liquid funds. As a policy, it limits its holdings in an unrelated company to less than 5% of its liquid funds. Potential investments are thoroughly analyzed. Call options are written on equities that the Group owns, and put options are written on equities which the Group wants to buy and for which cash is available.

Credit Risk

Credit risks arise from the possibility that customers may not be able to settle their obligations as agreed. To manage this risk the Group periodically assesses the financial reliability of customers, taking into account their financial position, past experience and other factors. Individual risk limits are set accordingly.

The Group's largest customer accounts for approximately 15% of net sales, and the second and third largest customers account for 13% and 6% of net sales (2013: 10%, 9% and 7% respectively). No other customer accounts for 5% or more of net sales, in either year.

The highest amounts of trade receivables outstanding were for these same three customers. They amounted to 11%, 8% and 4%, respectively, of the Group's trade receivables at December 31, 2014. There is no other significant concentration of credit risk (2013: 9%, 7% and 5% respectively).

Counterparty Risk

Counterparty risk encompasses issuer risk on marketable securities and money market instruments, credit risk on cash, time deposits and derivatives as well as settlement risk for different instruments. Issuer risk is reduced by only buying securities which are at least AA- rated. Counterparty credit risk and settlement risk is reduced by a policy of entering into transactions with counterparties (banks or financial

29. Financial Instruments—Additional Disclosures (Continued)

institutions) that feature a strong credit rating. For short-term investments of less than six months of maturity, the counterparty must be at least A-1/P-1/F-1 rated. Exposure to these risks is closely monitored and kept within predetermined parameters. The limits are regularly assessed and determined based upon credit analysis including financial statement and capital adequacy ratio reviews. In addition, reverse repurchasing agreements are contracted and Novartis has entered into credit support agreements with various banks for derivative transactions.

The Group's cash and cash equivalents are held with major regulated financial institutions, the three largest ones hold approximately 11.8%, 7.7% and 7.7%, respectively (2013: 21.8%, 18.4% and 8.9%, respectively).

The Group does not expect any losses from non-performance by these counterparties and does not have any significant grouping of exposures to financial sector or country risk.

Liquidity Risk

Liquidity risk is defined as the risk that the Group could not be able to settle or meet its obligations on time or at a reasonable price. Group Treasury is responsible for liquidity, funding as well as settlement management. In addition, liquidity and funding risks, related processes and policies are overseen by management. Novartis manages its liquidity risk on a consolidated basis based on business needs, tax, capital or regulatory considerations, if applicable, through numerous sources of financing in order to maintain flexibility. Management monitors the Group's net debt or liquidity position through rolling forecasts on the basis of expected cash flows.

29. Financial Instruments—Additional Disclosures (Continued)

The following table sets forth how management monitors net debt or liquidity based on details of the remaining contractual maturities of current financial assets and liabilities excluding trade receivables and payables and contingent considerations at December 31, 2014 and 2013:

December 31, 2014	Due or due within one month	Due later than one month but less than three months	Due later than three months but less than one year	Due later than one year but less than five years	Due after five years	Total
	$ m	$ m	$ m	$ m	$ m	$ m
Current assets						
Marketable securities and time deposits	21	68	37	181	76	383
Commodities	97					97
Derivative financial instruments and accrued interest	161	126	72			359
Cash and cash equivalents	9,623	3,400				13,023
Total current financial assets	**9,902**	**3,594**	**109**	**181**	**76**	**13,862**
Non-current liabilities						
Financial debt				(5,423)	(8,376)	(13,799)
Financial debt—undiscounted				*(5,434)*	*(8,470)*	*(13,904)*
Total non-current financial debt				**(5,423)**	**(8,376)**	**(13,799)**
Current liabilities						
Financial debt	(2,678)	(335)	(3,547)			(6,560)
Financial debt—undiscounted	*(2,678)*	*(335)*	*(3,549)*			*(6,562)*
Derivative financial instruments	(18)	(32)	(2)			(52)
Total current financial debt	**(2,696)**	**(367)**	**(3,549)**			**(6,612)**
Net debt	**7,206**	**3,227**	**(3,440)**	**(5,242)**	**(8,300)**	**(6,549)**

29. Financial Instruments—Additional Disclosures (Continued)

December 31, 2013	Due or due within one month	Due later than one month but less than three months	Due later than three months but less than one year	Due later than one year but less than five years	Due after five years	Total
	$ m	$ m	$ m	$ m	$ m	$ m
Current assets						
Marketable securities and time deposits	12	1,933	101	179	87	2,312
Commodities	97					97
Derivative financial instruments and accrued interest	26	97	3			126
Cash and cash equivalents	6,187	500				6,687
Total current financial assets	**6,322**	**2,530**	**104**	**179**	**87**	**9,222**
Non-current liabilities						
Financial debt				(5,201)	(6,041)	(11,242)
Financial debt—undiscounted				*(5,212)*	*(6,087)*	*(11,299)*
Total non-current financial debt				**(5,201)**	**(6,041)**	**(11,242)**
Current liabilities						
Financial debt	(2,896)	(2,270)	(1,507)			(6,673)
Financial debt—undiscounted	*(2,896)*	*(2,270)*	*(1,507)*			*(6,673)*
Derivative financial instruments	(44)	(37)	(22)			(103)
Total current financial debt	**(2,940)**	**(2,307)**	**(1,529)**			**(6,776)**
Net debt	**3,382**	**223**	**(1,425)**	**(5,022)**	**(5,954)**	**(8,796)**

The consolidated balance sheet amounts of financial liabilities included in the above analysis are not materially different to the contractual amounts due on maturity. The positive and negative fair values on derivative financial instruments represent the net contractual amounts to be exchanged at maturity.

29. Financial Instruments—Additional Disclosures (Continued)

The Group's contractual undiscounted potential cash flows from derivative financial instruments to be settled on a gross basis are as follows:

December 31, 2014	Due or due within one month	Due later than one month but less than three months	Due later than three months but less than one year	Total
	$ m	$ m	$ m	$ m
Derivative financial instruments and accrued interest on derivative financial instruments				
Potential outflows in various currencies—from financial derivative liabilities	(3,549)	(3,695)	(2,527)	(9,771)
Potential inflows in various currencies—from financial derivative assets	3,688	3,780	2,646	10,114

December 31, 2013	Due or due within one month	Due later than one month but less than three months	Due later than three months but less than one year	Total
	$ m	$ m	$ m	$ m
Derivative financial instruments and accrued interest on derivative financial instruments				
Potential outflows in various currencies—from financial derivative liabilities	(3,648)	(6,007)	(2,476)	(12,131)
Potential inflows in various currencies—from financial derivative assets	3,627	5,989	2,417	12,033

29. Financial Instruments—Additional Disclosures (Continued)

Other contractual liabilities which are not part of management's monitoring of the net debt or liquidity consist of the following items:

December 31, 2014	Due later than one month but less than three months	Due later than three months but less than one year	Due later than one year but less than five years	Due after five years	Total
	$ m	$ m	$ m	$ m	$ m
Contractual interest on non-current liabilities .	(154)	(436)	(1,778)	(3,087)	(5,455)
Trade payables and commitment for repurchase of own shares (see Note 22)	(6,077)				(6,077)

December 31, 2013	Due later than one month but less than three months	Due later than three months but less than one year	Due later than one year but less than five years	Due after five years	Total
	$ m	$ m	$ m	$ m	$ m
Contractual interest on non-current liabilities .	(236)	(236)	(1,146)	(830)	(2,448)
Trade payables	(6,148)				(6,148)

Capital Risk Management

Novartis strives to maintain a strong credit rating. In managing its capital, Novartis focuses on maintaining a strong balance sheet. Moody's rated the Group as Aa3 for long-term maturities and P-1 for short-term maturities and Standard & Poor's had a rating of AA- for long-term and A-1+ for short-term maturities. Fitch had a long-term rating of AA and a short-term rating of F1+.

The Group's debt/equity ratio increased to 0.29:1 at December 31, 2014 compared to 0.24:1 at the beginning of the year.

Value at Risk

The Group uses a value at risk (VAR) computation to estimate the potential ten-day loss in the fair value of its financial instruments.

A ten-day period is used because of an assumption that not all positions could be undone in one day given the size of the positions. Apart from contingent consideration, finance lease obligations, and long-term loans and receivables, advances and security deposits the VAR computation includes all

29. Financial Instruments—Additional Disclosures (Continued)

financial assets and financial liabilities as set forth above in this Note. Trade payables and receivables are considered only to the extent they comprise a foreign currency exposure. In addition, commodities are included in the computation.

The VAR estimates are made assuming normal market conditions, using a 95% confidence interval. The Group uses a "Delta Normal" model to determine the observed inter-relationships between movements in interest rates, stock markets and various currencies. These inter-relationships are determined by observing interest rate, stock market movements and forward foreign currency rate movements over a sixty-day period for the calculation of VAR amounts.

The estimated potential ten-day loss in pre-tax income from the Group's foreign currency instruments, the estimated potential ten-day loss of its equity holdings, and the estimated potential ten-day loss in fair value of its interest rate sensitive instruments (primarily financial debt and investments of liquid funds under normal market conditions) as calculated in the VAR model are the following:

	2014	2013
	$ m	$ m
All financial instruments	272	195
Analyzed by components:		
Instruments sensitive to foreign currency exchange rates	272	131
Instruments sensitive to equity market movements	48	27
Instruments sensitive to interest rates	254	93

The average, high, and low VAR amounts are as follows:

2014	Average	High	Low
	$ m	$ m	$ m
All financial instruments	240	306	193
Analyzed by components:			
Instruments sensitive to foreign currency exchange rates	154	272	83
Instruments sensitive to equity market movements	32	48	18
Instruments sensitive to interest rates	177	254	96

2013	Average	High	Low
	$ m	$ m	$ m
All financial instruments	188	238	150
Analyzed by components:			
Instruments sensitive to foreign currency exchange rates	156	244	115
Instruments sensitive to equity market movements	39	56	24
Instruments sensitive to interest rates	115	195	68

The VAR computation is a risk analysis tool designed to statistically estimate the maximum potential ten day loss from adverse movements in foreign currency exchange rates, equity prices and interest rates under normal market conditions. The computation does not purport to represent actual losses in fair value on earnings to be incurred by the Group, nor does it consider the effect of favorable changes in market rates. The Group cannot predict actual future movements in such market rates and it does not

29. Financial Instruments—Additional Disclosures (Continued)

claim that these VAR results are indicative of future movements in such market rates or to be representative of any actual impact that future changes in market rates may have on the Group's future results of operations or financial position.

In addition to these VAR analyses, the Group uses stress testing techniques that aim to reflect a worst case scenario on the marketable securities which are monitored by Group Treasury. For these calculations, the Group uses the six-months period with the worst performance observed over the past twenty years in each category. For 2014 and 2013, the worst case loss scenario was calculated as follows:

	2014	2013
	$ m	$ m
All financial instruments	16	24
Analyzed by components:		
Instruments sensitive to foreign currency exchange rates	1	7
Instruments sensitive to equity market movements	8	12
Instruments sensitive to interest rates	7	5

In the Group's risk analysis, Novartis considered this worst case scenario acceptable as it could reduce income, but would not endanger the solvency or the investment grade credit standing of the Group.

30. Discontinuing Operations

Discontinuing Operations Consolidated Income Statement Segmentation

(In $ m)	Vaccines[1]			Consumer Health			Transfers to continuing Corporate[2]			Corporate (including eliminations)			Total discontinuing operations		
	2014	2013	2012	2014	2013	2012	2014	2013	2012	2014	2013	2012	2014	2013	2012
Net sales to third parties of discontinuing operations	**1,537**	**1,987**	**1,858**	**4,279**	**4,064**	**3,735**							**5,816**	**6,051**	**5,593**
Sales to other segments	65	61	44	13	11	18							78	72	62
Net sales of discontinuing operations	**1,602**	**2,048**	**1,902**	**4,292**	**4,075**	**3,753**							**5,894**	**6,123**	**5,655**
Other revenues	32	333	331	33	36	36		(84)	(110)				65	285	247
Cost of goods sold	(1,336)	(1,578)	(1,478)	(1,737)	(1,751)	(1,729)		7	3			2	(3,073)	(3,322)	(3,202)
Gross profit of discontinuing operations	**298**	**803**	**755**	**2,588**	**2,360**	**2,050**		**(77)**	**(107)**			**2**	**2,886**	**3,086**	**2,700**
Marketing & Sales	(280)	(334)	(324)	(1,532)	(1,577)	(1,442)							(1,812)	(1,911)	(1,766)
Research & Development	(545)	(476)	(453)	(312)	(305)	(291)							(857)	(781)	(744)
General & Administration	(118)	(140)	(136)	(313)	(316)	(271)					(1)		(431)	(457)	(407)
Other income	905	70	23	99	79	75			(1)	3	25	29	1,007	174	126
Other expense	(812)	(88)	(115)	(60)	(63)	(73)		4	6	(274)	(37)	(41)	(1,146)	(184)	(223)
Operating loss of discontinuing operations	**(552)**	**(165)**	**(250)**	**470**	**178**	**48**		**(73)**	**(102)**	**(271)**	**(13)**	**(10)**	**(353)**	**(73)**	**(314)**
Income from associated companies	2	1	3										2	1	3
Loss before taxes of discontinuing operations													**(351)**	**(72)**	**(311)**
Taxes													(96)	55	164
Net loss of discontinuing operations													**(447)**	**(17)**	(147)

(1) 2013 as previously published, including the blood transfusion diagnostics unit.

(2) Other revenue contains royalties and out-licensing revenues of Vaccines which are to be retained by Novartis.

30. Discontinuing Operations (Continued)

Discontinuing Operations Consolidated Balance Sheet

	2014	2013
	$ m	$ m
Assets of disposal groups classified as discontinuing operations		
Property, plant and equipment	1,411	145
Goodwill	1,119	267
Intangible assets other than goodwill	1,343	91
Investments in associated companies	1	
Deferred tax assets	304	3
Other non-current assets	47	
Financial assets		7
Inventories	1,155	87
Trade receivables	1,085	154
Other current assets	336	5
Total	**6,801**	**759**

	2014	2013
	$ m	$ m
Liabilities of disposal groups classified as discontinuing operations		
Deferred tax liabilities	209	
Provisions and other non-current liabilities	497	
Trade payables	612	38
Current income tax liabilities	176	
Provisions and other current liabilities	924	12
Total	**2,418**	**50**

31. Events Subsequent to the December 31, 2014 Consolidated Balance Sheet Date

Dividend proposal for 2014 and approval of the Group's 2014 consolidated financial statements

On January 26, 2015, the Novartis AG Board of Directors proposed the acceptance of the 2014 consolidated financial statements of the Novartis Group for approval by the Annual General Meeting on February 27, 2015. Furthermore, also on January 26, 2015, the Board proposed a dividend of CHF 2.60 per share to be approved at the Annual General Meeting on February 27, 2015. If approved, total dividend payments would amount to approximately $6.4 billion (2013: $6.8 billion) using the CHF/$ December 31 exchange rate.

Divestment of the Animal Health Division

On January 1, 2015, Novartis completed the divestment of its Animal Health Division to Eli Lilly and Company, USA, for approximately $5.4 billion. This will result in a pre-tax gain of approximately $4.6 billion.

32. PRINCIPAL GROUP SUBSIDIARIES AND ASSOCIATED COMPANIES

As at December 31, 2014	Share/paid-in capital[1]		Equity interest %	Activities		
Argentina						
Novartis Argentina S.A., Buenos Aires	ARS	231.3 m	100	◆		▲
Alcon Laboratorios Argentina S.A., Buenos Aires	ARS	83.9 m	100	◆		
Sandoz S.A., Buenos Aires	ARS	88.0 m	100	◆		
Australia						
Novartis Australia Pty Ltd., North Ryde, NSW	AUD	11.0 m	100	■		
Novartis Pharmaceuticals Australia Pty Ltd., North Ryde, NSW	AUD	3.8 m	100	◆		▲
Alcon Laboratories (Australia) Pty Ltd., Frenchs Forest, NSW	AUD	2.6 m	100	◆		
Sandoz Pty Ltd., North Ryde, NSW	AUD	11.6 m	100	◆		
Novartis Consumer Health Australasia Pty Ltd., Melbourne, Victoria	AUD	7.6 m	100	◆	▼	
Novartis Animal Health Australasia Pty Ltd., North Ryde, NSW	AUD	3.0 m	100	◆		▲
Austria						
Novartis Austria GmbH, Vienna	EUR	1.0 m	100	■		
Novartis Pharma GmbH, Vienna	EUR	1.1 m	100	◆		
Alcon Ophthalmika GmbH, Vienna	EUR	36,336.4	100	◆		
Sandoz GmbH, Kundl	EUR	32.7 m	100	■ ◆	▼	▲
EBEWE Pharma Ges.m.b.H Nfg., Unterach am Attersee	EUR	1.0 m	100	◆	▼	▲
Bangladesh						
Novartis (Bangladesh) Limited, Gazipur	BDT	162.5 m	60	◆	▼	
Belgium						
N.V. Novartis Pharma S.A., Vilvoorde	EUR	7.1 m	100	◆		
S.A. Alcon-Couvreur N.V., Puurs	EUR	360.6 m	100	◆	▼	
N.V. Alcon S.A., Vilvoorde	EUR	141,856	100	◆		
N.V. Sandoz S.A., Vilvoorde	EUR	19.2 m	100	◆		
N.V. Novartis Consumer Health S.A., Vilvoorde	EUR	4.3 m	100	◆		
Bermuda						
Triangle International Reinsurance Ltd., Hamilton	CHF	1.0 m	100	■		
Novartis Securities Investment Ltd., Hamilton	CHF	30,000	100	■		
Novartis International Pharmaceutical Ltd., Hamilton	CHF	20,000	100	■ ◆	▼	▲
Trinity River Insurance Co.Ltd., Hamilton	$	370,000	100	■		
Brazil						
Novartis Biociências S.A., São Paulo	BRL	265.0 m	100	◆	▼	
Sandoz do Brasil Indústria Farmacêutica Ltda., Cambé, PR	BRL	190.0 m	100	◆	▼	▲
Novartis Saúde Animal Ltda., São Paulo	BRL	50.7 m	100	◆	▼	
Canada						
Novartis Pharmaceuticals Canada Inc., Dorval/Quebec	CAD	0[2]	100	◆		▲
Alcon Canada Inc., Mississauga, Ontario	CAD	0[2]	100	◆		
CIBA Vision Canada Inc., Mississauga, Ontario	CAD	1	100	◆	▼	
Sandoz Canada Inc., Boucherville, Quebec	CAD	76.8 m	100	◆	▼	▲
Novartis Consumer Health Canada Inc., Mississauga, Ontario	CAD	159,776	100	◆		
Novartis Animal Health Canada Inc., Charlottetown, Prince Edward Island	CAD	180,496	100	◆		▲

32. PRINCIPAL GROUP SUBSIDIARIES AND ASSOCIATED COMPANIES (Continued)

As at December 31, 2014		Share/paid-in capital[1]	Equity interest %	Activities		
Chile						
Novartis Chile S.A., Santiago de Chile	CLP	2.0 bn	100	◆		
Alcon Laboratorios Chile Limitada, Santiago de Chile	CLP	2.0 bn	100	◆		
China						
Beijing Novartis Pharma Co., Ltd., Beijing	$	30.0 m	100	◆	▼	
Novartis Pharmaceuticals (HK) Limited, Hong Kong	HKD	200	100	◆		
China Novartis Institutes for BioMedical Research Co., Ltd., Shanghai	$	133.0 m	100			▲
Suzhou Novartis Pharma Technology Co., Ltd., Changshu	$	97.4 m	100		▼	
Shanghai Novartis Trading Ltd., Shanghai	$	2.5 m	100	◆		
Alcon Hong Kong Limited, Hong Kong	HKD	77,000	100	◆		
Alcon (China) Ophthalmic Product Co., Ltd., Beijing	$	2.2 m	100	◆		
Sandoz (China) Pharmaceutical Co., Ltd., Zhongshan	$	22.0 m	100	◆	▼	
Zhejiang Tianyuan Bio-Pharmaceutical Co., Ltd., Hangzhou	CNY	46.8 m	85	◆	▼	
Shanghai Novartis Animal Health Co., Ltd., Shanghai	CHF	21.6 m	100	◆	▼	
Colombia						
Novartis de Colombia S.A., Santafé de Bogotá	COP	7.9 bn	100	◆	▼	
Laboratorios Alcon de Colombia S.A., Santafé de Bogotá	COP	20.9 m	100	◆		
Croatia						
Sandoz d.o.o., Zagreb	HRK	25.6 m	100	◆		
Czech Republic						
Novartis s.r.o., Prague	CZK	51.5 m	100	◆		
Sandoz s.r.o., Prague	CZK	44.7 m	100	◆		
Denmark						
Novartis Healthcare A/S, Copenhagen	DKK	14.0 m	100	◆		
Alcon Nordic A/S, Copenhagen	DKK	0.5 m	100	◆		
Sandoz A/S, Copenhagen	DKK	8.0 m	100	◆		
Ecuador						
Novartis Ecuador S.A., Quito	$	4.0 m	100	◆		
Egypt						
Novartis Pharma S.A.E., Cairo	EGP	33.8 m	99	◆	▼	
Sandoz Egypt Pharma S.A.E., New Cairo	EGP	250,000	100	◆		
Finland						
Novartis Finland Oy, Espoo	EUR	459,000	100	◆		
France						
Novartis Groupe France S.A., Rueil-Malmaison	EUR	103.0 m	100	■		
Novartis Pharma S.A.S., Rueil-Malmaison	EUR	43.4 m	100	◆	▼	▲
Laboratoires Alcon S.A., Rueil-Malmaison	EUR	12.9 m	100	◆	▼	
Sandoz S.A.S., Levallois-Perret	EUR	5.4 m	100	◆		
Novartis Santé Familiale S.A.S., Rueil-Malmaison	EUR	21.9 m	100	◆	▼	
Novartis Santé Animale S.A.S., Rueil-Malmaison	EUR	900,000	100	◆	▼	

32. PRINCIPAL GROUP SUBSIDIARIES AND ASSOCIATED COMPANIES (Continued)

As at December 31, 2014	Share/paid-in capital[1]		Equity interest %	Activities			
Germany							
Novartis Deutschland GmbH, Wehr	EUR	155.5 m	100	■			
Novartis Pharma GmbH, Nuremberg	EUR	25.6 m	100		◆		▲
Novartis Pharma Produktions GmbH, Wehr	EUR	2.0 m	100			▼	
Alcon Pharma GmbH, Freiburg	EUR	512,000	100		◆		
WaveLight GmbH, Erlangen	EUR	6.6 m	100		◆		
CIBA Vision GmbH, Grosswallstadt	EUR	15.4 m	100		◆	▼	▲
Sandoz International GmbH, Holzkirchen	EUR	100,000	100	■			
Sandoz Pharmaceuticals GmbH, Holzkirchen	EUR	5.1 m	100		◆		
Sandoz Industrial Products GmbH, Frankfurt a. M.	EUR	2.6 m	100		◆	▼	
1 A Pharma GmbH, Oberhaching	EUR	26,000	100		◆		
Salutas Pharma GmbH, Barleben	EUR	42.1 m	100		◆	▼	
Hexal AG, Holzkirchen	EUR	93.7 m	100	■	◆	▼	▲
Novartis Vaccines and Diagnostics GmbH, Marburg	EUR	5.0 m	100		◆	▼	▲
Novartis Vaccines Vertriebs GmbH, Holzkirchen	EUR	26,000	100		◆		
Novartis Consumer Health GmbH, Munich	EUR	14.6 m	100		◆	▼	▲
Novartis Tiergesundheit GmbH, Munich	EUR	256,000	100		◆		
Gibraltar							
Novista Insurance Limited, Gibraltar	CHF	130.0 m	100	■			
Greece							
Novartis (Hellas) S.A.C.I., Metamorphosis/Athens	EUR	23.4 m	100		◆		
Alcon Laboratories Hellas Commercial & Industrial S.A., Maroussi/Athens	EUR	5.7 m	100		◆		
Hungary							
Novartis Hungary Healthcare Limited Liability Company, Budapest	HUF	545.6 m	100		◆		
Sandoz Hungary Limited Liability Company, Budapest	HUF	883.0 m	100		◆		
India							
Novartis India Limited, Mumbai	INR	159.8 m	75		◆		
Novartis Healthcare Private Limited, Mumbai	INR	60.0 m	100		◆		
Alcon Laboratories (India) Private Limited, Bangalore	INR	1.1 bn	100		◆		
Sandoz Private Limited, Mumbai	INR	32.0 m	100		◆	▼	
Indonesia							
PT Novartis Indonesia, Jakarta	IDR	7.7 bn	100		◆	▼	
PT CIBA Vision Batam, Batam	IDR	11.9 bn	100			▼	
Ireland							
Novartis Ireland Limited, Dublin	EUR	25,000	100		◆		
Novartis Ringaskiddy Limited, Ringaskiddy, County Cork	EUR	2.0 m	100			▼	
Alcon Laboratories Ireland Limited, Cork City	EUR	541,251	100			▼	
Italy							
Novartis Farma S.p.A., Origgio	EUR	18.2 m	100	■	◆	▼	▲
Alcon Italia S.p.A., Milan	EUR	3.7 m	100		◆		
Sandoz S.p.A., Origgio	EUR	679,900	100		◆		
Sandoz Industrial Products S.p.A., Rovereto	EUR	2.6 m	100			▼	
Novartis Vaccines and Diagnostics S.r.l., Siena	EUR	41.6 m	100		◆	▼	▲
Novartis Consumer Health S.p.A., Origgio	EUR	2.9 m	100		◆		

32. PRINCIPAL GROUP SUBSIDIARIES AND ASSOCIATED COMPANIES (Continued)

As at December 31, 2014	Share/paid-in capital[1]		Equity interest %	Activities		
Japan						
Novartis Holding Japan K.K., Tokyo	JPY	10.0 m	100	■		
Novartis Pharma K.K., Tokyo	JPY	6.0 bn	100		◆	▲
Alcon Japan Ltd., Tokyo	JPY	500.0 m	100		◆	
Sandoz K.K., Tokyo	JPY	100.0 m	100		◆	▼ ▲
Novartis Animal Health K.K., Tokyo	JPY	50.0 m	100		◆	▲
Luxembourg						
Novartis Investments S.à r.l., Luxembourg-Ville	$	2.6 bn	100	■		
Novartis Finance S.A., Luxembourg-Ville	$	100,000	100	■		
Malaysia						
Novartis Corporation (Malaysia) Sdn. Bhd., Kuala Lumpur	MYR	3.3 m	100		◆	
Alcon Laboratories (Malaysia) Sdn. Bhd., Petaling Jaya	MYR	1.0 m	100		◆	
CIBA Vision Johor Sdn. Bhd., Gelang Patah	MYR	5.0 m	100			▼
Mexico						
Novartis Farmacéutica, S.A. de C.V., Mexico City	MXN	205.0 m	100		◆	▼
Alcon Laboratorios, S.A. de C.V., Mexico City	MXN	5.9 m	100		◆	▼
Sandoz, S.A. de C.V., Mexico City	MXN	468.2 m	100		◆	▼
Netherlands						
Novartis Netherlands B.V., Arnhem	EUR	1.4 m	100	■		
Novartis Pharma B.V., Arnhem	EUR	4.5 m	100		◆	
Alcon Nederland B.V., Breda	EUR	18,151	100		◆	
Sandoz B.V., Almere	EUR	907,570	100		◆	▼
Novartis Consumer Health B.V., Breda	EUR	23,830	100		◆	▼
New Zealand						
Novartis New Zealand Ltd., Auckland	NZD	820,000	100		◆	
Norway						
Novartis Norge AS, Oslo	NOK	1.5 m	100		◆	
Pakistan						
Novartis Pharma (Pakistan) Limited, Karachi	PKR	3.9 bn	100		◆	▼
Panama						
Novartis Pharma (Logistics), Inc., Ciudad de Panama	$	10,000	100		◆	
Peru						
Novartis Biosciences Peru S.A., Lima	PEN	6.1 m	100		◆	
Philippines						
Novartis Healthcare Philippines, Inc., Makati/Manila	PHP	298.8 m	100		◆	
Sandoz Philippines Corporation, Manila	PHP	30.0 m	100		◆	▼
Poland						
Novartis Poland Sp. z o.o., Warszawa	PLN	44.2 m	100		◆	
Alcon Polska Sp. z o.o., Warszawa	PLN	750,000	100		◆	
Sandoz Polska Sp. z o.o., Warszawa	PLN	25.6 m	100		◆	
Lek S.A., Strykow	PLN	11.4 m	100		◆	▼

32. PRINCIPAL GROUP SUBSIDIARIES AND ASSOCIATED COMPANIES (Continued)

As at December 31, 2014	Share/paid-in capital[1]		Equity interest %	Activities			
Portugal							
Novartis Portugal SGPS Lda., Porto Salvo	EUR	500,000	100	■			
Novartis Farma—Produtos Farmacêuticos S.A., Porto Salvo	EUR	2.4 m	100		◆		
Alcon Portugal-Produtos e Equipamentos Oftalmologicos Lda., Porto Salvo	EUR	4.5 m	100		◆		
Sandoz Farmacêutica Lta., Porto Salvo	EUR	5.0 m	100		◆		
Novartis Consumer Health—Produtos Farmacêuticos e Nutrição Lda., Porto Salvo	EUR	100,000	100		◆		
Puerto Rico							
Ex-Lax, Inc., Humacao	$	10,000	100			▼	
Alcon (Puerto Rico) Inc., Catano	$	15.5	100		◆		
Romania							
Sandoz S.R.L., Targu-Mures	RON	105.2 m	100		◆	▼	
Russian Federation							
Novartis Pharma LLC, Moscow	RUB	20.0 m	100		◆		
Alcon Farmacevtika LLC, Moscow	RUB	44.1 m	100		◆		
ZAO Sandoz, Moscow	RUB	57.4 m	100		◆		
Novartis Neva LLC, St. Petersburg	RUB	500.0 m	100			▼	
Novartis Consumer Health LLC, Moscow	RUB	80.0 m	100		◆		
Saudi Arabia							
Saudi Pharmaceutical Distribution Co. Ltd., Riyadh	SAR	26.8 m	75		◆		
Singapore							
Novartis (Singapore) Pte Ltd., Singapore	SGD	100,000	100		◆		
Novartis Singapore Pharmaceutical Manufacturing Pte Ltd., Singapore	SGD	45.0 m	100				
Novartis Asia Pacific Pharmaceuticals Pte Ltd., Singapore	SGD	39.0 m	100		◆		
Novartis Institute for Tropical Diseases Pte Ltd., Singapore	SGD	2,004	100				▲
Alcon Singapore Manufacturing Pte Ltd., Singapore	SGD	101,000	100			▼	
CIBA Vision Asian Manufacturing and Logistics Pte Ltd., Singapore	SGD	1.0 m	100			▼	
Slovakia							
Novartis Slovakia s.r.o., Bratislava	EUR	2.0 m	100		◆		
Slovenia							
Lek Pharmaceuticals d.d., Ljubljana	EUR	48.4 m	100	■	◆	▼	▲
Sandoz Pharmaceuticals d.d., Ljubljana	EUR	1.5 m	100		◆		
South Africa							
Novartis South Africa (Pty) Ltd., Kempton Park	ZAR	86.3 m	100		◆		
Alcon Laboratories (South Africa) (Pty) Ltd., Bryanston, Gauteng	ZAR	201,820	100		◆		
Sandoz South Africa (Pty) Ltd., Kempton Park	ZAR	3.0 m	100		◆	▼	
South Korea							
Novartis Korea Ltd., Seoul	KRW	24.5 bn	99		◆		
Alcon Korea Ltd., Seoul	KRW	33.8 bn	100		◆		

32. PRINCIPAL GROUP SUBSIDIARIES AND ASSOCIATED COMPANIES (Continued)

As at December 31, 2014	Share/paid-in capital[1]		Equity interest %	Activities			
Spain							
Novartis Farmacéutica, S.A., Barcelona	EUR	63.0 m	100	■	◆	▼	
Alcon Cusi S.A., El Masnou	EUR	11.6 m	100		◆	▼	
Sandoz Farmacéutica, S.A., Madrid	EUR	270,450	100		◆		
Sandoz Industrial Products, S.A., Les Franqueses del Vallés/ Barcelona	EUR	9.3 m	100		◆	▼	▲
Novartis Vaccines and Diagnostics, S.L., Barcelona	EUR	675,450	100		◆		
Novartis Consumer Health, S.A., Barcelona	EUR	876,919	100		◆		
Sweden							
Novartis Sverige AB, Täby/Stockholm	SEK	5.0 m	100		◆		
Switzerland							
Novartis International AG, Basel	CHF	10.0 m	100	■			
Novartis Holding AG, Basel	CHF	100.2 m	100	■			
Novartis Research Foundation, Basel	CHF	29.3 m	100	■			
Novartis Foundation for Management Development, Basel	CHF	100,000	100	■			
Novartis Foundation for Employee Participation, Basel	CHF	100,000	100	■			
Novartis Sanierungsstiftung, Basel	CHF	2.0 m	100	■			
Novartis Pharma AG, Basel	CHF	350.0 m	100	■	◆	▼	▲
Novartis Pharma Services AG, Basel	CHF	20.0 m	100		◆		
Novartis Pharma Schweizerhalle AG, Schweizerhalle	CHF	18.9 m	100			▼	
Novartis Pharma Stein AG, Stein	CHF	251,000	100			▼	▲
Novartis Pharma Schweiz AG, Rotkreuz	CHF	5.0 m	100		◆		▲
Alcon Switzerland SA, Rotkreuz	CHF	100,000	100		◆		
Alcon Pharmaceuticals Ltd., Fribourg	CHF	200,000	100	■	◆		
ESBATech, a Novartis Company GmbH, Schlieren	CHF	14.0 m	100				▲
Sandoz AG, Basel	CHF	5.0 m	100	■	◆		▲
Sandoz Pharmaceuticals AG, Risch	CHF	100,000	100		◆		
Novartis Vaccines and Diagnostics AG, Basel	CHF	800,000	100	■			▲
Novartis Consumer Health S.A., Prangins	CHF	30.0 m	100	■	◆	▼	▲
Novartis Consumer Health Schweiz AG, Rotkreuz	CHF	250,000	100		◆		
Novartis Animal Health AG, Basel	CHF	101,000	100	■	◆	▼	▲
Novartis Centre de Recherche Santé Animale S.A., St. Aubin	CHF	250,000	100				▲
Roche Holding AG, Basel	CHF	160.0 m	33/6[3]	■			
Taiwan							
Novartis (Taiwan) Co., Ltd., Taipei	TWD	170.0 m	100		◆	▼	
Thailand							
Novartis (Thailand) Limited, Bangkok	THB	230.0 m	100		◆		
Alcon Laboratories (Thailand) Ltd., Bangkok	THB	228.1 m	100		◆		
Turkey							
Novartis Saglik, Gida ve Tarim Ürünleri Sanayi ve Ticaret A.S., Istanbul	TRY	98.0 m	100		◆	▼	
Alcon Laboratuvarlari Ticaret A.S., Istanbul	TRY	25.2 m	100		◆		
Sandoz Ilaç Sanayi ve Ticaret A.S., Istanbul	TRY	165.2 m	100		◆	▼	

32. PRINCIPAL GROUP SUBSIDIARIES AND ASSOCIATED COMPANIES (Continued)

As at December 31, 2014		Share/paid-in capital[1]	Equity interest %	Activities			
United Arab Emirates							
Novartis Middle East FZE, Dubai	AED	7.0 m	100		◆		
United Kingdom							
Novartis UK Limited, Frimley/Camberley	GBP	25.5 m	100	■			
Novartis Pharmaceuticals UK Limited, Frimley/Camberley	GBP	5.4 m	100		◆	▼	▲
Novartis Grimsby Limited, Frimley/Camberley	GBP	230 m	100			▼	
Alcon Eye Care (UK) Limited, Frimley/Camberley	GBP	550,000	100		◆		
Sandoz Limited, Frimley/Camberley	GBP	2.0 m	100		◆		
Novartis Vaccines and Diagnostics Limited, Frimley/ Camberley	GBP	100	100		◆	▼	
Novartis Consumer Health UK Limited, Horsham	GBP	25,000	100		◆	▼	
Novartis Animal Health UK Limited, Frimley/ Camberley	GBP	100,000	100		◆		▲
United States of America							
Novartis Corporation, East Hanover, NJ	$	72.2 m	100	■			
Novartis Finance Corporation, New York, NY	$	1,002	100	■			
Novartis Capital Corporation, New York, NY	$	1	100	■			
Novartis Pharmaceuticals Corporation, East Hanover, NJ	$	5.2 m	100		◆	▼	▲
Novartis Institutes for BioMedical Research, Inc., Cambridge, MA	$	1	100				▲
CoStim Pharmaceuticals, Inc., Cambridge, MA	$	1	100				▲
Novartis Institute for Functional Genomics, Inc., San Diego, CA	$	21,000	100				▲
Genoptix, Inc., Carlsbad, CA	$	1	100		◆		▲
Alcon Laboratories, Inc., Fort Worth, TX	$	1,000	100	■	◆	▼	
Alcon Refractive Horizons, LLC, Fort Worth, TX	$	10	100			▼	
Alcon Research, Ltd., Fort Worth, TX	$	12.5	100			▼	▲
Alcon LenSx, Inc., Alisio Viejo, CA	$	100	100			▼	
WaveTec Vision Systems, Inc., Alisio Viejo, CA	$	1	100		◆	▼	▲
Sandoz Inc., Princeton, NJ	$	25,000	100		◆	▼	▲
Fougera Pharmaceuticals, Inc., Melville, NY	$	1	100		◆		▲
Eon Labs, Inc., Princeton, NJ	$	1	100		◆	▼	
Falcon Pharmaceuticals, Ltd., Forth Worth, TX	$	10	100		◆		
Novartis Vaccines and Diagnostics, Inc., Cambridge, MA	$	3.0	100		◆	▼	▲
Novartis Consumer Health, Inc., Parsippany, NJ	$	0[2]	100		◆	▼	▲
Novartis Animal Health US, Inc., Greensboro, NC	$	100	100		◆	▼	▲
Venezuela							
Novartis de Venezuela, S.A., Caracas	VEF	1.4 m	100		◆		
Alcon Pharmaceutical, C.A., Caracas	VEF	5.5 m	100		◆		

In addition, the Group is represented by subsidiaries, associated companies or joint ventures in the following countries: Algeria, Bosnia/Herzegovina, Bulgaria, Cayman Islands, Costa Rica, Dominican Republic, Guatemala, the Former Yugoslav Republic of Macedonia, Morocco, Ukraine and Uruguay.

(1) Share/paid-in capital may not reflect the taxable share/paid-in capital amount and does not include any paid-in surplus.

(2) shares without par value

(3) Approximately 33% of voting shares; approximately 6% of total net income and equity attributable to Novartis

m = million; bn = billion

32. PRINCIPAL GROUP SUBSIDIARIES AND ASSOCIATED COMPANIES (Continued)

The following describe the various types of entities within the Group:

■ **Holding/Finance:** This entity is a holding company and/or performs finance functions for the Group.

◆ **Sales:** This entity performs sales and marketing activities for the Group.

▼ **Production:** This entity performs manufacturing and/or production activities for the Group.

▲ **Research:** This entity performs research and development activities for the Group.

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