Annual Report 2015

NOVARTIS

OUR MISSION

Our mission is to discover new ways to improve and extend people's lives. We use science-based innovation to address some of society's most challenging healthcare issues. We discover and develop breakthrough treatments and find new ways to deliver them to as many people as possible. We also aim to provide a shareholder return that rewards those who invest their money, time and ideas in our company.

PHOTO ESSAYS

BRINGING HEALTHCARE HOME

Switzerland's well-developed network of home healthcare workers is helping cope with an aging population.

→ STORY STARTS ON PAGE 13

FIGHTING THE BIGGEST KILLER OF YOUNG CHILDREN

An army of health workers is guarding Bangladeshi children from the deadly scourge of pneumonia.

→ STORY STARTS ON PAGE 23

PRIMING THE BODY'S OWN DEFENSES AGAINST CANCER

Scientists are developing a new personalized T-cell therapy that could alter the course of cancer care.

→ STORY STARTS ON PAGE 43

THE CHALLENGE OF REVERSING THE RISE IN OBESITY

A weight reduction program in one US state is helping tackle the growing problem of obesity.

→ STORY STARTS ON PAGE 75

IMPROVING ACCESS TO HEALTHCARE IN RURAL VIETNAM

The rise of chronic disease will require getting more medicines to more people in less-developed countries.

→ STORY STARTS ON PAGE 109

MAKING CLEAR VISION A PERSONAL MISSION

Volunteer surgeons are bringing the gift of sight to some of the world's poorest people.

→ STORY STARTS ON PAGE 139

CONTENTS

A LIFE DEDICATED TO FIGHTING MALARIA

Nurse Agnes Akoth has spent three decades on the front line against this deadly disease in Kenya.

→ STORY STARTS ON PAGE 61

Cover image: Dr. Chang As Xinh, 37, updates records in his office at a community hospital in northeast Vietnam. Dr. Xinh is one of just 15 doctors who deliver medical care to more than 40 000 mostly ethnic H'mong people here.

CHAIRMAN'S LETTER

Joerg Reinhardt

Dear shareholder,

In 2015, Novartis completed a portfolio transformation to focus on three leading divisions, strengthen our pharmaceuticals operation, and leverage our new services organization to improve productivity and profitability. We also achieved important milestones in developing our pipeline and enhancing access to healthcare. We believe these steps position us well to navigate the challenging healthcare environment and sustainably grow sales, profits and dividends.

Our strategic focus on science-based innovation continues to generate strong results

Our strategic focus on science-based innovation continues to generate strong results. We launched a series of new products, including breakthrough therapies such as heart failure medicine *Entresto* and psoriasis treatment *Cosentyx*. The effectiveness of our products gives us the confidence to explore pay-for-performance pricing models, which can offer economic benefits to healthcare systems and build trust with our customers.

At the same time, we broadened our research and development pipeline, particularly in the areas of immuno-oncology and neuroscience. Experimental compounds in both areas have the potential to change the practice of medicine, and we are striving to be among the leaders in the fields of oncology and neurology. We appointed a new President of the Novartis Institutes for BioMedical Research, who will start in early 2016, and we continue to attract leading scientists. This will reinforce our own research efforts, as well as our collaborations with other research institutions.

As the healthcare landscape evolves, we will continue to work with technology leaders. For example, we have entered into partnerships to investigate new opportunities in the realm of gene editing and at the intersection of information technology and healthcare. These research areas may transform aspects of healthcare and disrupt conventional business models. We are prepared to embrace and benefit from these changes.

As a healthcare leader, we also have a responsibility to help improve access to medicines and healthcare for patients around the world. As part of our long-standing corporate responsibility activities, last year we launched the Novartis Access portfolio. It is designed to provide affordable,

OUR STRATEGIC APPROACH

Our mission is to discover new ways to improve and extend people's lives.

By focusing on science-based innovation to deliver better outcomes for patients around the world, we have established a strong competitive position. Our approach serves the interests of our shareholders and reinforces our goal to lead in growing areas of healthcare, focusing on pharmaceuticals, eye care and generics.

To support the pursuit of our strategy, we foster a corporate culture of high ethical standards and promote innovation, quality, collaboration, performance, courage and integrity.

We are committed to patients, associates, healthcare partners and society at large to improve access to healthcare and essential medicines as we aspire to become a trusted leader in changing the practice of medicine.

For more detail on our strategy, see page 16.

+4%

Proposed dividend increase per share (CHF)
2015: 2.70
2014: 2.60

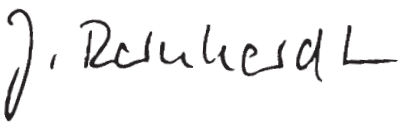
high-quality medicines to address the rising burden of noncommunicable diseases such as diabetes and breast cancer in developing countries. Besides delivering needed medicines, this social business model aims to support healthcare systems and help manage the rising cost of care and its economic consequences.

Additionally, we continue to evolve our corporate governance and are dedicated to enhancing interactions with our stakeholders. The Board of Directors is fully committed to this task. We aim to reinforce our diversity and safeguard our independence in the interest of Novartis and our shareholders. This will help us be a trusted healthcare partner guided by integrity and open to dialogue and collaboration.

All of these efforts make us confident that we can continue to strengthen our market position in 2016.

I thank you for the confidence you have placed in our company and am pleased to be able to propose a dividend increase of 4% to CHF 2.70 at the next Annual General Meeting.

Sincerely,



Joerg Reinhardt
Chairman of the Board of Directors

CHIEF EXECUTIVE OFFICER'S LETTER

Joseph Jimenez

Dear shareholder,

Novartis made strong progress in 2015. We completed a major portfolio transformation, reinforced our lead in innovation, and delivered solid financial performance. I'm convinced we have a strong foundation for growth in a world where the population is aging and healthcare systems need to deliver quality care more cost-effectively.

Sales grew 5% in constant currencies (cc) to USD 49.4 billion, in our continuing operations. Core operating income, which excludes certain exceptional items, rose 10% (cc) to USD 13.8 billion. Our core margin improved 1.3 percentage points (cc) to 27.9%. Results were driven by strong performance in our Pharmaceuticals and Sandoz Divisions, which helped offset disappointing performance in our Alcon Division.

Sales of our growth products rose 17% and accounted for 34% of net sales, underscoring our continued success in renewing our product portfolio and offsetting the impact of patent expirations. In emerging markets, sales growth slowed to 7% in 2015, as some economies cooled. But we believe the slowdown is temporary and we remain focused on the long-term potential for these markets.

We finalized a portfolio transformation that has improved our competitive position. Novartis is now a more focused company with leading positions in innovative pharmaceuticals, generics and eye care. As a company we have the innovation power and global scale necessary to compete effectively in a changing world.

Novartis Business Services (NBS), our new cross-divisional services organization, ramped up in 2015 and played a critical role in identifying additional synergies across our businesses that are yielding important productivity gains. These gains produced overall savings of USD 3.2 billion last year, with the biggest savings of USD 1.7 billion coming from procurement efforts.

NBS now has about 9 500 employees worldwide, with five global service centers scaling up. I expect NBS to continue driving productivity gains and cost savings across Novartis.

Novartis has leading positions in innovative pharmaceuticals, generics and eye care with the innovation power and global scale necessary to compete effectively in a changing world

STRENGTHENING OUR LEAD IN INNOVATION

Novartis has a long heritage as a leader in innovation and we strengthened our position in 2015.

Our development teams delivered new medicines with significant potential health benefits for millions of patients, including *Entresto* for heart failure; *Cosentyx* for psoriasis and other illnesses; and *Zarxio*, the first biosimilar approved under new rules in the US. These products help underpin our future.

We also strengthened our pipeline, leveraging our strong position in cancer by adding depth in immuno-oncology and boosting options for combination therapies. And we are exploring new technologies that will enable us to address unmet medical need being driven by dramatic demographic shifts, such as diseases associated with aging, addressed through regenerative medicine.

Finally, we appointed a capable new leader for our research organization to succeed Mark Fishman, who is retiring and whose leadership and scientific prowess will be missed. His successor, Jay Bradner, is a physician and a scientist with strong business acumen and a passion for advancing research through collaboration.

For more detail on innovation, see page 44.

5%

Rise in net sales[1] (cc)

10%

Increase in core operating income[1] (cc)

20

Major approvals in key markets

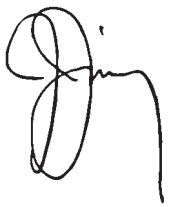
We made further strides in areas that we hope reinforce the trust that our customers and society place in us. Although we know there is more work to do, we continued to make excellent progress on quality, with 98% of 192 regulatory inspections worldwide in 2015 yielding good or acceptable findings. We are taking steps to reinforce our culture of integrity by, for instance, modifying incentives for sales forces and changing some promotional practices.

As we focus on improving health outcomes for patients by leveraging medical science, we are also advancing the creative use of new digital technology and data analysis to help healthcare systems deliver real-world outcomes with our therapies. This will enable us to improve value and reduce waste in the system. In this time of increased scrutiny on drug prices, we understand that patients and healthcare systems need to get good value for what they spend on treatments.

In 2016 we plan to take further steps to improve our effectiveness and efficiency as an organization, supporting future growth and innovation. We have a solid plan to return Alcon to growth by focusing the business, strengthening its foundation and investing for growth. At the Group level we plan to centralize our manufacturing across divisions and create more shared services to lower our cost base. And we are integrating some of our drug development functions to enhance innovation even further, while increasing efficiency.

I'd like to thank Novartis associates for continuing to deliver strong results during a period of significant changes in our company. I also extend thanks to our shareholders for their continued support.

Sincerely,



Joseph Jimenez
Chief Executive Officer

[1] Continuing operations

KEY PERFORMANCE INDICATORS CONSOLIDATED HIGHLIGHTS

Financial

KEY FIGURES[1]
(in USD millions, unless indicated otherwise)

			% Change	
	2015	2014	USD	Constant currencies
Net sales to third parties from continuing operations	49 414	52 180	– 5	5
Operating income from continuing operations	8 977	11 089	– 19	– 2
Return on net sales (%)	18.2	21.3		
Net income from continuing operations	7 028	10 727	– 34	– 18
Net income/loss from discontinued operations[2]	10 766	– 447		
Net income[2]	17 794	10 280	73	91
Basic earnings per share[3] (USD) from continuing operations	2.92	4.39	– 33	– 17
Basic earnings per share[2,3] (USD) from discontinued operations	4.48	– 0.18		
Total basic earnings per share[2,3] (USD)	7.40	4.21	76	94
Core operating income from continuing operations	13 790	14 473	– 5	10
Core return on net sales (%)	27.9	27.7		
Core net income from continuing operations	12 041	12 653	– 5	9
Core earnings per share[3] (USD) from continuing operations	5.01	5.19	– 3	10
Free cash flow from continuing operations	9 259	10 934	– 15	
Free cash flow	9 029	10 762	– 16	

SHARE INFORMATION

	2015	2014	% Change
Share price at year-end (CHF)	86.80	92.35	– 6
ADR price at year-end (USD)	86.04	92.66	– 7
Dividend[4] (CHF)	2.70	2.60	4
Payout ratio[5] based on continuing operations (%)	93	62	
Payout ratio[5] (%)	37	65	

FURTHER DETAIL
On our performance, see page 24
On our financial report, see page 138

[1] This Annual Report includes non-IFRS financial measures such as core results, constant currencies and free cash flow. Novartis believes that investor understanding of the Group's performance is enhanced by disclosing these non-IFRS measures. Core measures exclude items that can vary significantly from year to year, such as the impact of certain significant exceptional and other items related to disposals and acquisitions, as well as other exceptional items over a USD 25 million threshold. Constant currency calculations have the goal of eliminating 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. Free cash flow is an indicator of the Group's ability to operate without additional borrowing or the use of existing cash. Further details of non-IFRS measures, including reconciliation tables, can be found starting on page 165.

[2] Net income from discontinued operations and net income of the Group include exceptional divestment gains. Continuing and discontinued operations are defined on page 147.

[3] 2015 weighted average number of shares outstanding: 2 403 million (2014: 2 426 million)

[4] Dividend 2015: proposal to shareholders for approval at the Annual General Meeting on February 23, 2016

[5] Payout ratio 2015 is calculated by converting into USD the proposed total gross dividend amount in CHF at the CHF-USD exchange rate of December 31, 2015 based on an estimated number of shares outstanding on dividend payment date and dividing it by the USD consolidated net income from continuing operations and net income attributable to shareholders of Novartis AG in the Group's 2015 consolidated financial statements.

Innovation

KEY FIGURES[1]	2015	2014
Projects entering portfolio[2,3]	**25**	13
Ongoing Phase III programs[4]	**37**	37
US FDA breakthrough therapy designations[5]	**0**	2
Major submissions (US, EU, JP)[6]	**14**	15
Major approvals (US, EU, JP)[6,7]	**20**	14
New molecular entity (NME) approvals[8]	**6**	4

Social[8]

ACCESS	2015	2014
Total patients reached (millions)	**972**	939
Patients reached through access programs (millions)	**66**	72
People reached through training, health education and service delivery (millions)	**12**	10
Top 20 global burden of disease conditions addressed by products and pipeline[9]	**100%**	100%

PEOPLE		
Full-time equivalent positions / headcount[10]	**118 700 / 122 966**	117 809 / 122 113
Turnover: % voluntary / % overall	**7.3 / 13.5**	7.0 / 13.0
Women in management: % of management[11] / % of Board of Directors	**41 / 27**	40 / 18
Associate nationalities / associate nationalities in management[11]	**144 / 109**	147 / 109
Lost-time injury and illness rate (per 200 000 hours worked)[12]	**0.11**	0.12

ETHICS		
Misconduct cases reported / allegations substantiated[13]	**1 299 / 755**	1 547 / 1 131
Regulatory inspections without major findings (%)	**98.4**	97.9

ENVIRONMENTAL SUSTAINABILITY		
Greenhouse gas emissions, total Scope 1 and Scope 2 (1 000 t)[14]	**1 350.7**	1 361.9
Water discharge (million m^3)	**16.6**	17.0

FURTHER DETAIL
On innovation, see page 44

FURTHER DETAIL
On social, see page 62

[1] Includes Pharmaceuticals, Sandoz biosimilars and Alcon ophthalmic pharmaceuticals only
[2] Includes clinical Phase II programs only, post proof of concept. First patient, first visit (FPFV) has occurred. Also include small molecules, biologics; new fixed-dose combinations of existing active pharmaceutical ingredients (APIs); and new target indications, defined as new disease or new line of treatment (e.g., first- vs. second-line). Counted by indication and not compound
[3] This number has been adjusted due to an internal reporting errror. In 2014, we reported it as 30.
[4] Includes projects with FPFV in a Phase III study but not yet filed in US, EU or Japan
[5] Therapies under development by Novartis designated as breakthrough therapies by the US Food and Drug Administration
[6] Includes small molecules, biologics; new fixed-dose combinations of existing APIs; and new target indications, defined as new disease or new line of treatment (e.g., first- vs. second-line)
[7] This number has been adjusted due to an internal reporting errror. In 2014, we reported it as 13.
[8] Continuing operations
[9] As defined by the US-based Institute for Health Metrics and Evaluation, excluding injuries
[10] Headcount reflects the total number of associates in our payroll systems. Full-time equivalent adjusts headcount for associates working less than 100%. All data as of December 31
[11] Management defined locally
[12] Data include Novartis associates and third-party personnel managed by Novartis associates
[13] Reporting has changed from assessing cases to assessing allegations. Because one case can have more than one allegation, the assessment per allegation is higher than the previously reported assessment per case. Furthermore, numbers are based on the date a misconduct case is reported, whereas previously they were based on the date a misconduct case was assigned for investigation. 2014 data have been restated following the new methodology.
[14] Scope 1: combustion and process, and vehicles; Scope 2: purchased energy

2015 AT A GLANCE

Who we are

Novartis is a global healthcare company based in Basel, Switzerland, with roots dating back more than 150 years. We provide healthcare solutions that address the evolving needs of patients and societies worldwide. Novartis products are available in more than 180 countries and they reached nearly 1 billion people globally in 2015. About 123 000 people of 144 nationalities work at Novartis around the world.

FURTHER DETAIL
Visit www.novartis.com/about-us

Our environment

The world's rapidly growing and aging population is driving changes in healthcare, presenting both new opportunities and new challenges for Novartis. The global population will increase by more than 1 billion people by 2030, projects the United Nations, with most of that growth occurring in developing countries. People over age 60 are the fastest-growing population segment, expected to add 500 million people and reach 1.4 billion by 2030.

These factors are behind increasing demand for healthcare worldwide. If current growth rates continue, healthcare spending will likely more than double by 2025, exceeding USD 15 trillion. Governments and health insurers are increasingly searching for ways to keep spending in check. They are focusing on the value they receive, based on tangible benefits for patients and healthcare systems.

These developments validate our focus on innovation and global scale, and underscore the need for collaboration to reinforce our know-how in areas of emerging science and technology.

FURTHER DETAIL
On our environment, see page 14

Our strategy

We believe Novartis is well prepared for a world with a growing, aging population and evolving healthcare needs. Our mission, vision and strategy support the creation of long-term value for our company, our shareholders and society.

Our mission is to discover new ways to improve and extend people's lives. Our vision is to be a trusted leader in changing the practice of medicine. Our strategy is to use science-based innovation to deliver better outcomes for patients and to lead in growing areas of healthcare.

We maintain strong investment in research and development focused on areas of unmet medical need.

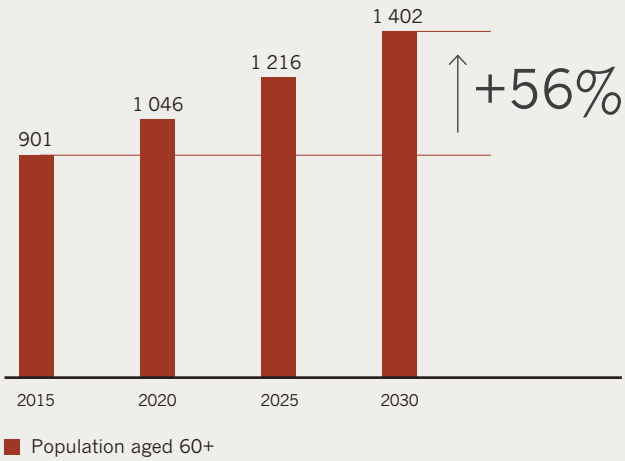
180+
Countries where Novartis products are available

972 m
Patients reached

49.4 bn
Net sales (USD)

208.3 bn
Market capitalization[1] (USD)

AGING POPULATIONS
2015–2030 (in millions)



[1] As of December 31, 2015; excluding treasury shares

Source: United Nations projections

Our values

Strong values define our culture and help us execute the Novartis strategy in line with our mission and vision. We updated values across our organization in 2015. They describe the professional behavior we expect from employees: innovation, quality, collaboration, performance, courage and integrity.

Our portfolio

LEADING DIVISIONS

Transactions completed in 2015 focus Novartis on industry-leading divisions with innovation power and global scale: pharmaceuticals, eye care and generics. Novartis acquired GlaxoSmithKline's (GSK) oncology products, solidifying our position as a global leader in cancer treatments. We also merged our Over-the-Counter business into a joint venture with GSK, and sold our Vaccines and Animal Health businesses.

SUPPORTING OUR DIVISIONS

Novartis Institutes for BioMedical Research
The Novartis Institutes for BioMedical Research (NIBR) is the innovation engine of Novartis, focused on discovering new drugs that can change the practice of medicine.

Novartis Business Services
Novartis Business Services (NBS) consolidates support services across Novartis divisions, helping drive efficiency, standardization and simplification. Its role in generating productivity gains supports our continued investment in research and development, and underpins strong financial results.

FURTHER DETAIL

On our strategy, see page 16
On our culture and values, see page 18
On our portfolio, see page 19
On NIBR, see page 19
On NBS, see page 19

LEADING DIVISIONS

Pharmaceuticals

Develops innovative patented medicines

Alcon

Offers the world's widest spectrum of eye care products

Sandoz

A leader in the growing generic medicines industry

2015 AT A GLANCE
continued

Performance highlights

FINANCIAL

Novartis delivered solid performance in continuing operations in 2015, supported by our growth products,[1] productivity gains, and strength in our Pharmaceuticals and Sandoz Divisions. These factors helped counter a stronger US dollar, economic slowdowns in key emerging markets, and weakness in our Alcon eye care division.

Net sales were USD 49.4 billion, a 5% decline from 2014 in reported terms, but up 5% measured in constant currencies (cc). Operating income was USD 9.0 billion (–19%, –2% cc), down mainly due to the amortization of the new oncology assets in the Pharmaceuticals Division. Operating income margin was 18.2% of net sales. Net income from continuing operations was USD 7.0 billion, down 34% (–18% cc), mainly due to an exceptional USD 0.4 billion charge in the current year and exceptional gains of USD 1.2 billion in the prior year. Earnings per share (EPS) from continuing operations were USD 2.92, down 33% (–17% cc).

Total net income rose 73% to USD 17.8 billion, mainly due to gains from our portfolio transformation.

Total free cash flow in 2015 of USD 9.0 billion declined 16%, primarily due to the negative impact of currency exchange rates.

We also present our core results, which exclude the impact of significant disposals, acquisitions and other exceptional items. Our core operating income from continuing operations in 2015 was USD 13.8 billion (–5%, +10% cc). Core operating income margin grew 1.3 percentage points in constant currencies due to higher sales and enhanced productivity. However, that gain was offset by 1.1 percentage points of negative impact from currency exchange rates, resulting in a margin of 27.9% of net sales.

Core net income from continuing operations was USD 12.0 billion (–5%, +9% cc), and core EPS was USD 5.01 (–3%, +10% cc).

INNOVATION

Research and development efforts in 2015 yielded 20 major approvals and 14 major submissions. A key approval during the year in the US and EU was *Entresto* (formerly LCZ696) to treat heart failure. We received approval in the US and EU for *Cosentyx* for psoriasis, as well as approval in Europe to treat psoriatic arthritis and ankylosing spondylitis. *Tafinlar* + *Mekinist*, the first combination therapy approved for metastatic melanoma, also received approval in the US and EU.

Additionally, Sandoz extended its leadership in biosimilars with US approval for *Zarxio* (filgrastim), the first biosimilar under a new regulatory framework. In eye care, we launched three new intraocular lens products under the *AcrySof* brand for patients undergoing cataract surgery.

[1] Growth products are products launched in 2010 or later, or products with exclusivity until at least 2019 in key markets (EU, US, Japan), except Sandoz, which includes only products launched in the last 24 months.
[2] In constant currencies and for continuing operations

FINANCIAL

5%
Rise in net sales[2]

9.0 bn
Total free cash flow (USD)

10%
Increase in core operating income[2]

73%
Increase in total net income (in USD)

INNOVATION

200+
Projects in clinical development

8.9 bn
Research and development spend (USD)

SOCIAL

66 m
Patients reached through access programs

100%
Of top 20 conditions causing the global disease burden addressed by our portfolio

SOCIAL

In 2015, we launched Novartis Access, focused on the affordability and availability of 15 on- and off-patent medicines to treat chronic illnesses in developing countries. The portfolio is offered to governments and other public-sector healthcare providers for USD 1 per treatment per month. It launched in Kenya and Ethiopia, with plans to expand to about 30 countries.

Also in 2015, the Novartis Malaria Initiative concluded a partnership with charity Malaria No More, which enabled public donations of malaria treatments for children in Africa.

Sandoz launched a new program in Ethiopia to improve maternal and child health and to reduce mortality associated with childbirth. Alcon supported 552 medical missions, reaching more than 390 000 patients with eye conditions.

Novartis also adopted new environmental sustainability targets for 2020, including commitments to further cut greenhouse gas emissions. Moreover, we voluntarily adopted an internal price of USD 100 per ton of carbon dioxide we emit, providing an added incentive to investments that will reduce emissions.

To reinforce our culture of ethics, Novartis began pursuing new ways of engaging healthcare professionals, while adjusting promotional practices.

FURTHER DETAIL

On our performance, see page 24

Governance and compensation

Novartis made additional progress on corporate governance. The Board of Directors' Research & Development Committee met four times to evaluate the effectiveness and competitiveness of our R&D organization, reinforcing the Board's focus on innovation.

We increased diversity on our Board. Nancy C. Andrews, a medical researcher, dean of the Duke University School of Medicine and vice chancellor for academic affairs at Duke University in the US, joined last February. Two more Board candidates were nominated for election at the Annual General Meeting of Shareholders in 2016.

We further reinforced our corporate governance framework, implementing all remaining rules related to the Minder Initiative, including binding shareholder votes on aggregate compensation for the Board and Executive Committee of Novartis, and a non-binding vote on the Compensation Report. We introduced annual elections of the Chairman of the Board, all Board members and Compensation Committee members.

2015 was a year of stability and refinement for our compensation system. Our approach is designed to align pay with business strategy and shareholder interest through a rigorous performance management process.

FURTHER DETAIL

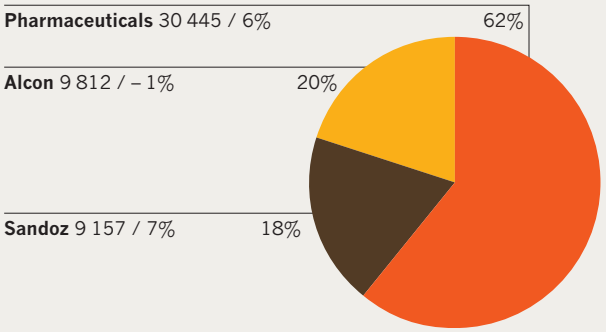
On governance, see page 76

On compensation, see page 110

Research and development efforts in 2015 yielded 20 major approvals and 14 major submissions

2015 NET SALES FROM CONTINUING OPERATIONS BY DIVISION

(in USD millions, growth in % cc[1] and divisional share of net sales)



[1] In constant currencies

STRATEGIC OVERVIEW

CONTENTS

PHOTO ESSAY

Bringing healthcare home

Bianca Wuersch climbs into a four-seat gondola and sets a bag of medical supplies on the seat beside her as the cable car jerks to life, swaying up a steep mountainside toward a remote Alpine community.

Gondola rides and hard-to-reach homes are all part of a typical day's work for Ms. Wuersch, an energetic 34-year-old nurse who provides home healthcare to elderly clients in a rural part of central Switzerland.

→ CONTINUED ON PAGE 21

OUR ENVIRONMENT

Strong demographic and economic trends continue to transform societies worldwide and shape the future of healthcare. These trends are opening opportunities for Novartis, while at the same time raising new challenges.

The world's population is rapidly growing and aging. According to the United Nations (UN), the global population reached 7.3 billion in 2015 – an increase of about 1 billion people in the last 12 years. Moreover, the latest UN projections indicate the world will add more than 1 billion people within the next 15 years, with most of that growth occurring in developing countries. A contributing factor is increasing longevity. Those over the age of 60 represent the fastest-growing segment of the population – a segment that is expected to climb by 500 million people by 2030, reaching 1.4 billion.

In addition, the ongoing rapid movement of people from rural to urban areas is impacting lifestyles, including diet and physical activity. This population shift and increasing longevity are both contributing to a rise in chronic illnesses such as diabetes, cancer and heart disease in developed and developing countries alike. Globally, chronic diseases account for about 63% of all deaths. They likely will account for 70% by 2025, according to the World Health Organization.

Taken together, these factors are likely to drive increasing demand for healthcare worldwide. If growth in healthcare spending were to continue at the current pace, global outlays could more than double by 2025 to USD 15 trillion. At the same time, economic uncertainty and tight budgets are prompting many governments and healthcare insurers to look for ways to moderate spending growth. During 2015, these pressures were evident in the fiscal crisis in Greece, lingering economic malaise in much of Europe, and the slowdown in China. These factors are also contributing to increased scrutiny on drug pricing by governments, media and consumers.

INNOVATION AND PATIENT HEALTH OUTCOMES

Against this backdrop, we see an acceleration of the trend for governments and insurers to focus on the value they receive for their healthcare spending, based on tangible benefits for patients and healthcare systems, rather than simply paying for products and services. This is driving a shift toward measurement of health outcomes for patients as a means of identifying the most effective treatments. Payors increasingly seek evidence of health outcomes and aim to make payments based on them.

For instance, the US Department of Health and Human Services in 2015 announced plans to tie 90% of all Medicare payments to the quality or value of care by 2018. Other countries such as France are also moving quickly, asking for real-world evidence of effectiveness as part of a process to periodically re-evaluate prices and reimbursement for prescription drugs. Developed markets such as Europe and the US likely will embrace this trend at a faster rate than Japan and developing markets.

In addition, the overall pace of innovation in the healthcare industry continues to gather speed. For instance, the US Food and Drug Administration in 2015 approved 45 new drug compounds, versus 41 in 2014 and 27 in 2013.

We believe these developments validate our strategy of focusing on science-based innovation to deliver better outcomes for patients. These trends underline the need to maintain our research and development efforts in pursuit of breakthrough innovation, and to demonstrate better results for patients in everyday healthcare settings.

INDUSTRY CONSOLIDATION AND NEW ENTRANTS

These trends are prompting profound shifts in the competitive landscape. There is ongoing consolidation in the pharmaceutical industry. Merger and acquisition activity continued to accelerate in 2015, with announced deals in the industry totaling about USD 429 billion, up from USD 211 billion in 2014.

At the same time, new entrants are looking to use their expertise to establish or expand their presence in healthcare. Many are technology companies hoping to benefit as data

By 2030, the world population is expected to grow by more than

1 bn

By 2030, the number of people worldwide over age 60 is expected to increase by

500 m

At current growth rates, by 2025 healthcare spending could double to USD

15 tn

Looking ahead, we remain convinced we have a sound strategy that will position Novartis to compete today and in the future

and data management become increasingly important in healthcare. For instance, Verily (formerly Google Life Sciences) initially focused on new types of digital diagnostic devices, such as the glucose-monitoring contact lens for diabetics that our Alcon eye care division is a collaborator in developing. It is also working to build capabilities in health data management. IBM, meanwhile, has acquired medical imaging companies and added the artificial intelligence capabilities of its Watson supercomputer to help doctors diagnose and treat patients. The growing role of health-related technology has the potential to add a new digital dimension to the pharmaceutical industry.

This shifting industry landscape underscores the need to pursue collaborations that reinforce our know-how in areas of emerging science and technology. It also highlights the importance of having scale and innovation power to compete effectively in the future. That logic drove our own business portfolio transformation, which was completed in 2015, focusing Novartis on leading global divisions in growing areas of healthcare: patented pharmaceuticals, generic medicines and eye care. Our portfolio transformation was a critical move that will help us further pursue our strategy.

Looking ahead, we remain convinced we have a sound strategy that will position Novartis to compete today and in the future. As we move forward with the execution of our strategy, we are taking additional steps to reinforce innovation, build capabilities to help us benefit from the increasing focus on patient health outcomes, strengthen our culture, and further improve operating efficiency.

FURTHER DETAIL

On our performance, see page 24
On research and development, see page 44
On risks, see page 162

Home healthcare nurse Margrit Locher visits Maria Matter at her rural home in Switzerland to help manage her pain medication.

OUR STRATEGY

Novartis has a sound strategy to navigate a world with a growing, aging population and continuously evolving healthcare needs. Our mission and vision complement our strategy, and together they support the creation of value over the long term for our company, our shareholders and society.

The Novartis mission, vision and strategy are all anchored in our company's long heritage and tradition of leadership in innovation. We believe our mission accurately describes why we exist as a company, while our vision expresses an ambitious aspiration to strive for. Along with our strategy, they effectively guide our path to the future.

OUR MISSION

Our mission is to discover new ways to improve and extend people's lives.

We use science-based innovation to address some of society's most challenging healthcare issues. We discover and develop breakthrough treatments and find new ways to deliver them to as many people as possible.

We also aim to provide a shareholder return that rewards those who invest their money, time and ideas in our company.

OUR VISION

Our vision is to be a trusted leader in changing the practice of medicine.

OUR STRATEGY

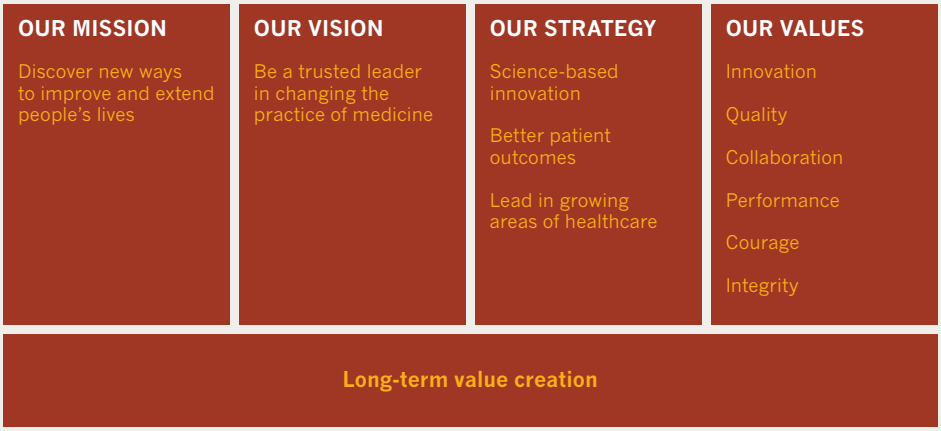
Our strategy is to use science-based innovation to deliver better patient outcomes. We aim to lead in growing areas of healthcare.

Science-based innovation

We believe innovation that produces breakthrough medicines and products will be more important than ever in the healthcare industry in the coming years. We maintain substantial investment in research and development (R&D) aimed at areas of unmet medical need. Our product pipeline is fed by a distinctive research and clinical approach that focuses on scientific advances before market potential.

Innovation founded in strong science is at the heart of Novartis

Our approach for sustainable growth



We aim to develop innovative products in growing areas of healthcare where we can make a real difference

Our R&D strategy is to continue reinforcing therapeutic areas where we are already strong – including oncology, cardiovascular, eye care, biosimilars and neuroscience – and to expand into new disease areas that we believe are ripe for innovation, such as immuno-oncology, aging and regenerative medicine, and infectious diseases.

Better patient outcomes

We seek to develop medicines and products that can produce positive real-world outcomes for patients and healthcare providers. The benefits can range from improving the cost-effectiveness of high-quality care to prolonging lives. We are developing services and technologies to augment the benefits of our core products, often in collaboration with healthcare providers and technology companies.

Lead in growing areas of healthcare

We aim to develop innovative products in growing areas of healthcare where we can make a real difference. We focus on patented medicines, generic medicines and eye care – segments where we have the innovation power and global scale necessary to compete effectively. At the same time, we are expanding our presence in the emerging markets of Asia, Africa and Latin America, where there is fast-growing demand for access to high-quality medicines and healthcare.

FURTHER DETAIL
On our innovation, see page 44

On a typical day, home healthcare worker Sybilla Blumer assists a series of clients in rural communities and farms in the mountains of central Switzerland.

OUR CULTURE AND VALUES

Talented and committed people from diverse backgrounds are important for executing our strategy. Equally important is how they execute it. We foster a company culture that supports the success of the enterprise through clear values to guide our people in their work.

OUR CULTURE

The traditional Novartis culture of performance served us well for many years, underpinning our ability to deliver results. While performance remains important, in the context of a rapidly evolving healthcare landscape, our sharpened strategy and the business portfolio transformation undertaken in 2015, we are also reshaping our culture. We are taking steps to continue building a culture that strengthens our people as they face new challenges.

OUR VALUES

Our values define our culture and help us execute the Novartis strategy in line with our mission and vision. They describe the professional behavior we expect from our employees. We use six values – which were rolled out across our company in 2015 – to inform our recruitment activities, shape employee development programs, and help guide individual performance assessments and decisions about bonuses and other rewards. Comprehensive training programs ensure our people are familiar with these values and know how to apply them on the job.

Innovation

Innovation founded in strong science is at the heart of Novartis and key for our strategy. We nurture a culture of innovation by encouraging people to experiment and take smart risks. Our aim is to foster creative thinking that leads to practical solutions to healthcare and business challenges.

Quality

Delivering high quality is critical to ensuring a reliable supply of important medicines and earning the trust of our customers and society. Our focus on quality excellence includes continuously enhancing our standards, technology and training for our people.

Collaboration

We foster teamwork among our employees to efficiently deliver innovative new products to patients and healthcare providers. This capitalizes on the diversity and creativity of our global staff.

Performance

People at Novartis are known for their focus on delivering results – and they often make extraordinary efforts to achieve their goals. We aim to reinforce that focus on personal and collective achievement while maintaining high ethical standards.

Courage

We want our associates to speak out, challenge conventional thinking, and stand up for their ideas. We also want them to have the courage to do the right thing in the face of resistance or moral dilemmas. They need the fortitude to take smart risks, even when the chance of failure is high.

Integrity

High performance with integrity is fundamental to the way we operate at Novartis and is critical to maintaining the support of society and governments. Our Code of Conduct sets high ethical standards, and comprehensive training ensures our associates know how to apply these standards in their work. We also enforce our code, investigating allegations of wrongdoing and taking decisive corrective action when needed.

We are taking steps to build a culture that supports our people as they face new challenges

OUR PORTFOLIO

In 2015, Novartis completed a transformation that focuses our business on divisions with innovation power and global scale: pharmaceuticals, eye care and generics. We also further built our business services group to drive collaboration and efficiency across divisions. These steps position us for future growth and support our ability to create long-term value.

LEADING DIVISIONS

In 2015, Novartis completed a series of transactions that focus our company on industry-leading divisions. With strong global positions in patented medicines, generic medicines and eye care, Novartis has the scale necessary to continue developing new products that respond to changing healthcare needs in markets worldwide.

As part of these transactions, Novartis acquired GlaxoSmithKline's (GSK) oncology products, solidifying our position as a global leader in cancer treatments. Novartis and GSK also merged their over-the-counter businesses into a joint venture that is one of the world's largest consumer healthcare companies, 36.5% owned by Novartis. At the same time, Novartis sold our Vaccines business, excluding our influenza business, to GSK. Our influenza vaccines business was sold to CSL Limited and our Animal Health business was sold to Eli Lilly.

SUPPORTING OUR DIVISIONS

Novartis Institutes for BioMedical Research
The Novartis Institutes for BioMedical Research (NIBR), with more than 6 000 scientists and physicians worldwide, is the innovation engine of Novartis. NIBR focuses on discovering new drugs that can change the practice of medicine.

Novartis Business Services
Novartis Business Services (NBS) consolidates support services across Novartis divisions, helping drive efficiency, standardization and simplification. NBS includes six service domains: financial reporting and accounting operations, human resources services, information technology, procurement, product lifecycle services, and real estate and facility management. NBS has about 9 500 associates. Its role in generating productivity gains supports our continued investment in research and development, and underpins strong financial results.

FURTHER DETAIL
On NIBR and innovation, see page 44

Our divisions

PHARMACEUTICALS
We develop innovative, patent-protected medicines and are at the forefront of development and commercialization in oncology, primary care and specialty medicines.

ALCON EYE CARE
We provide products that enhance quality of life by helping people see better and we offer the world's widest spectrum of eye care products.

SANDOZ GENERICS
We are a leader in the growing generics industry, offering more than 1 000 different types of high-quality, affordable medicines across a broad range of therapeutic areas.

1 Healthcare worker Sybilla Blumer walks to the mountain home of a client in the hamlet of Wiesenberg, Switzerland.
2 Ms. Blumer helps manage medication for Walter Imboden following an operation on his toe.
3 Nurse Margrit Locher assists Jobst von Buddenbrock in his mountain home near Stans, Switzerland.
4 Bianca Wuersch arrives at the home of Rene-Marcel Hagenbach to help with the fit of his new prosthetic leg.

4

CONTINUED FROM PAGE 13

Home care plays an important role in Switzerland, which like so many countries has a rapidly aging population and is looking at care options for growing ranks of elderly

The people Ms. Wuersch cares for include a 72-year-old man whose leg was recently amputated, a 75-year-old who needs help with his Parkinson's medication, and a group of elderly nuns living in an isolated monastery. She is one of more than 100 home caregivers working for a local chapter of Spitex, a nonprofit organization that provides home care in Switzerland.

Home care plays an important role in Switzerland, which like so many countries has a rapidly aging population and is looking at care options for growing ranks of elderly. The proportion of people over the age of 60 in Switzerland is projected to surpass 30% by 2030, up from about one-fourth today.

Switzerland is building on a long tradition of home care. Spitex affiliates typically receive some support from local or regional governments. And health insurance also picks up at least part of the cost for Spitex services.

For Ms. Wuersch and her colleagues, the day starts with a staff meeting at 7 a.m. in the Spitex office next to the local hospital in the town of Stans. Then they shoulder their bags of equipment and head off on their rounds.

Many of the local Spitex chapter's nearly 800 clients live in rural communities and remote farms reachable by narrow mountain roads or small gondolas that sometimes serve a single household. In winter when the area becomes blanketed with snow, Spitex workers occasionally use snowshoes to reach some remote homes.

Spitex staff provide medical or household help, keep tabs on people living in isolated places, and provide a measure of companionship. For instance, one of Spitex worker Margrit Locher's clients lives alone and suffers from dementia. Ms. Locher knows he can be moody, so she checks the mailbox on the way to his house to see if he has had the energy to collect the post. "I can always tell if he's in a good way," she says. She helps wash his feet, changes a bandage and chats with him before heading off to her next client.

Later Ms. Locher goes to the home of Maria Matter, 79, who is receiving pain medication for an injury suffered when she fell out of a tree while gathering plums. Spitex workers visit regularly to change her morphine patch and manage her medication. While Ms. Locher is there, they step outside to admire Ms. Matter's rose garden.

Spitex workers chat and joke with clients during visits. But they must also keep an eye on the clock, for each service they provide has an allotted time – often 30 minutes or less. And they don't want to get behind on their schedules.

PERFORMANCE

CONTENTS

PHOTO ESSAY

Fighting the biggest killer of young children

In a poor district of the Bangladeshi capital Dhaka, a small army of yellow-robed health workers is engaged in a constant battle against the world's biggest killer of young children.

Pneumonia causes around 2 million child deaths per year globally and the burden is especially heavy in a country like Bangladesh, where a third of the population is aged 14 or below.

→ CONTINUED ON PAGE 40

PERFORMANCE SUMMARY

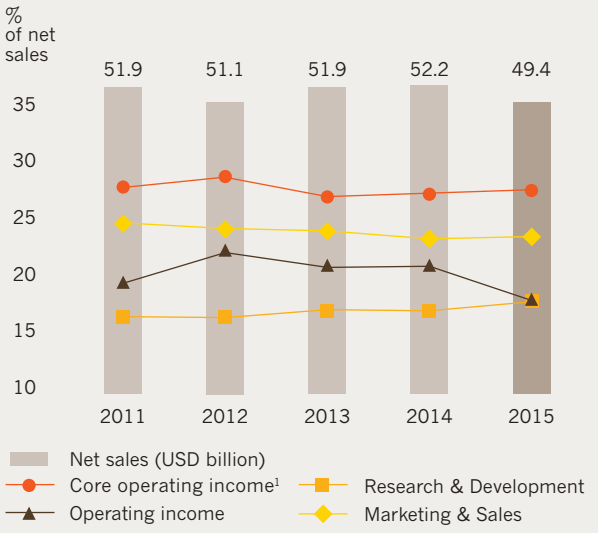
Novartis delivered solid performance in continuing operations in 2015, while also successfully completing a major portfolio transformation. Sales and core operating income increased, measured in constant currencies. Our innovation efforts continued to yield important new treatments in areas such as heart failure and cancer, helping rejuvenate our portfolio and underpin growth. We also made progress in the areas of people management and quality, and we launched a new program to boost access to medicines in developing countries.

KEY FIGURES[1]

(in USD millions, unless indicated otherwise)

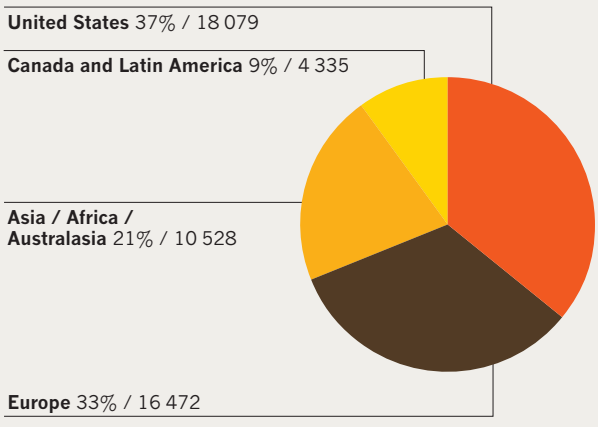
			% Change	
	2015	2014	USD	Constant currencies
Net sales to third parties from continuing operations	49 414	52 180	– 5	5
Operating income from continuing operations	8 977	11 089	– 19	– 2
Return on net sales (%)	18.2	21.3		
Net income from continuing operations	7 028	10 727	– 34	– 18
Net income/loss from discontinued operations[2]	10 766	– 447		
Net income[2]	17 794	10 280	73	91
Basic earnings per share[3] (USD) from continuing operations	2.92	4.39	– 33	– 17
Basic earnings per share[2,3] (USD) from discontinued operations	4.48	– 0.18		
Total basic earnings per share[2,3] (USD)	7.40	4.21	76	94
Core operating income from continuing operations	13 790	14 473	– 5	10
Core return on net sales (%)	27.9	27.7		
Core net income from continuing operations	12 041	12 653	– 5	9
Core earnings per share[3] (USD) from continuing operations	5.01	5.19	– 3	10
Free cash flow from continuing operations	9 259	10 934	– 15	
Free cash flow	9 029	10 762	– 16	

NET SALES, OPERATING INCOME, CORE OPERATING INCOME,[1] RESEARCH & DEVELOPMENT, MARKETING & SALES FROM CONTINUING OPERATIONS AS % OF NET SALES



2015 NET SALES FROM CONTINUING OPERATIONS BY GEOGRAPHICAL REGION

(% of net sales and in USD millions)



[1] This Annual Report includes non-IFRS financial measures such as core results, constant currencies and free cash flow. Novartis believes that investor understanding of the Group's performance is enhanced by disclosing these non-IFRS measures. Core measures exclude items that can vary significantly from year to year, such as the impact of certain significant exceptional and other items related to disposals and acquisitions, as well as other exceptional items over a USD 25 million threshold. Constant currency calculations have the goal of eliminating 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. Free cash flow is an indicator of the Group's ability to operate without additional borrowing or the use of existing cash. Further details of non-IFRS measures, including reconciliation tables, can be found starting on page 165.

[2] Net income from discontinued operations and net income of the Group include exceptional divestment gains. Continuing and discontinued operations are defined on page 147.

[3] 2015 weighted average number of shares outstanding: 2 403 million (2014: 2 426 million)

5%

Increase in net sales[1] (cc) compared to 3% in 2014

10%

Increase in core operating income[1] (cc) compared to 7% in 2014

27.9%

Core margin in 2015, a slight increase compared to 2014, despite strong negative impact from currency exchange rates

FINANCIAL PERFORMANCE

Novartis had solid operating performance in continuing operations in 2015, supported by the success of our growth products,[2] ongoing efforts to improve our productivity, and strength in our Pharmaceuticals and Sandoz Divisions. These factors helped counter headwinds from a stronger US dollar, economic slowdowns in key emerging markets, and weakness in our Alcon eye care division.

The Group's underlying business continues to grow, with expanding core margins, after backing out the effects of currency exchange rates and exceptional items.

Net sales were USD 49.4 billion, a 5% decline from 2014 in reported terms, but up 5% measured in constant currencies (cc). Operating income was USD 9.0 billion (–19%, –2% cc), down mainly due to the amortization of new oncology assets in the Pharmaceuticals Division. Operating income margin was 18.2% of net sales. Net income from continuing operations was USD 7.0 billion, down 34% (–18% cc), mainly due to an exceptional USD 0.4 billion charge in the current year and exceptional gains of USD 1.2 billion in the prior year. Earnings per share (EPS) from continuing operations were USD 2.92, down 33% (–17% cc).

Total net income was USD 17.8 billion, up 73% from 2014, due to gains from our portfolio transformation.

Total free cash flow in 2015 of USD 9.0 billion declined 16%, mainly due to the negative impact of currency exchange rates.

To help investors track the underlying health of our business, we also present core results, which exclude the impact of disposals, acquisitions and other significant exceptional items. Our core operating income from continuing operations in 2015 was USD 13.8 billion (–5%, +10% cc). Core operating income margin grew 1.3 percentage points in constant currencies due to higher sales and improved productivity. However, that was offset by 1.1 percentage points of negative impact from currency exchange rates, yielding a core margin of 27.9% of net sales, a slight increase compared to 2014.

Core net income from continuing operations was USD 12.0 billion (–5%, +9% cc), and core EPS was USD 5.01 (–3%, +10% cc).

Growth

Across our divisions, our portfolio of growth products continued to support performance in 2015. Sales of growth products increased 17% to USD 16.6 billion, or 34% of net sales, demonstrating our ability to renew our product portfolio and helping offset the impact of patent expirations. In our Pharmaceuticals Division, sales of growth products increased 33% (cc) and accounted for 44% of net sales, up from 36% in 2014.

Pharmaceutical growth products in 2015 included *Gilenya* (USD 2.8 billion, +21% cc), our oral therapy for multiple sclerosis; *Tasigna* (USD 1.6 billion, +16% cc), a treatment for chronic myeloid leukemia; and *Afinitor* (USD 1.6 billion, +10% cc), a treatment for several types of cancer.

Although overall Alcon performance lagged in 2015, some products continued to do well. Alcon saw continued growth in sales of its innovative *Dailies Total1* contact lenses, as well as double-digit growth in glaucoma fixed-dose combination products and *Systane* for dry eye. Sales of disposable cataract and vitreoretinal surgical supplies also grew.

In the Sandoz Division, sales of biopharmaceuticals, including biosimilar follow-on versions of complex biologic drugs, rose 39% (cc) to USD 772 million globally.

Efforts to expand in emerging growth markets[2] such as those in Asia, Africa and Latin America continued to deliver results, although growth moderated as overall economic activity slowed in China, Brazil, India and elsewhere. Net sales in emerging markets rose 7% (cc) to USD 12.4 billion, led by Turkey, up 14% (cc), and Brazil, up 12% (cc).

[1] Continuing operations
[2] Growth products are products launched in 2010 or later, or products with exclusivity until at least 2019 in key markets (EU, US, Japan), except Sandoz (launched in the last 24 months). Emerging growth markets are all markets except the US, Canada, Western Europe, Japan, Australia and New Zealand.

PERFORMANCE SUMMARY
continued

Productivity
Last year Novartis continued to find synergies across divisions in our ongoing effort to improve productivity. Total productivity gains reached USD 3.2 billion in 2015, 6% of net sales. Novartis Business Services (NBS), the cross-divisional services organization that ramped up last year, played a key role in achieving this result. NBS continues to scale up the offshoring of services to global service centers, while outsourcing selected services to third parties.

The biggest savings came from our procurement efforts, through which we saved more than USD 1.7 billion on goods and services, or about 8% of the spending managed by Novartis procurement organizations.

An ongoing effort begun in 2010 to optimize our global manufacturing network continues to yield results. In 2015, we announced plans to exit Sandoz manufacturing sites in Frankfurt and Gerlingen, Germany, as well as in Turbhe, India. We also closed a Pharmaceuticals Division facility in Resende, Brazil, divested an Alcon site in Kaysersberg, France, as well as a pharmaceutical site in Taboão da Serra, Brazil, and announced the downsizing of a Pharmaceuticals Division site in Ringaskiddy, Ireland. To date, 25 sites in our continuing operations have been or are being restructured or divested. These steps help us balance production capacity and further increase efficiency.

INNOVATION PERFORMANCE

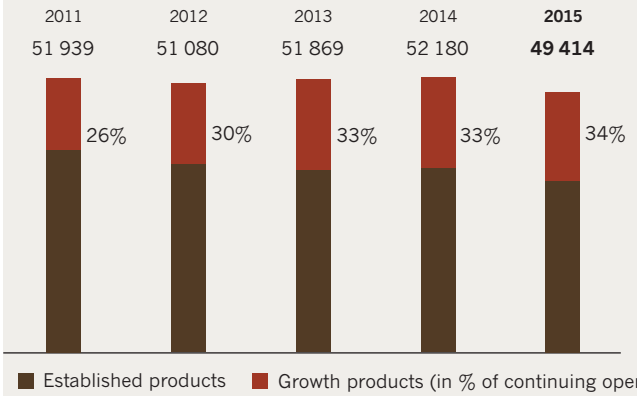
We made significant progress in research and development in 2015, with 20 major approvals in key markets and 14 major submissions.

Cardiovascular
Novartis had notable success during the year with the approval in the US and EU of *Entresto* (formerly LCZ696) to treat chronic heart failure with reduced ejection fraction, a condition where the heart muscle does not contract effectively and less oxygen-rich blood is pumped around the body. *Entresto* is the first new drug in decades to treat this form of heart failure. It is also the only heart failure drug to show a significant mortality benefit in a head-to-head trial against the existing best treatment, enalapril.

1.7 bn

Procurement savings (USD), vs. 1.6bn (USD) in 2014

CONTRIBUTION OF GROWTH PRODUCTS[1]
(continuing operations net sales in USD millions, % of continuing operations net sales)



[1] Since 2010, to demonstrate the rejuvenation of our portfolio, we have separately reported the net sales and growth rate of our newer products. During the years 2010 through 2012, these included products launched in 2007 or later (except for Sandoz products, which were included only if launched within the preceding one to two years). Beginning in 2013, we moved to a slightly different definition of "growth products," which included products launched within the preceding five years, or products with exclusivity in key markets (EU, US, Japan) for at least the next four years (except for Sandoz products, which were included only if launched within the preceding two years).

20

Major regulatory approvals as well as 14 major submissions

Novartis received approval in the US and EU for Entresto *(LCZ696) to treat heart failure*

Oncology

New cancer drugs gained regulatory approval in 2015. *Zykadia*, for patients with non-small cell lung cancer, was approved in the EU, a year after its US approval. The treatment is from a new class of medicines known as anaplastic lymphoma kinase (ALK) inhibitors.

In September, Novartis received EU approval for *Tafinlar* + *Mekinist*, the first combination therapy approved for patients with unresectable or metastatic melanoma with a BRAF V600 mutation – the most aggressive form of skin cancer and one associated with low survival rates. This approval followed two Phase III trials in which the *Tafinlar* + *Mekinist* combination showed significant overall survival benefit. The US Food and Drug Administration (FDA) approved the *Tafinlar* + *Mekinist* combination in late 2015.

The FDA and the European Commission also approved our first-in-class multiple myeloma drug *Farydak* (panobinostat), shown in trials to boost progression-free survival by about 7.8 months.

We also reached major development milestones during the year with promising pipeline products, including CTL019 in non-Hodgkin's lymphoma, a difficult-to-treat disease. CTL019, a personalized cell therapy for cancer, is being developed with the University of Pennsylvania in the US.

Immunology and dermatology

In early 2015, we received approval in the US and EU for *Cosentyx* to treat moderate-to-severe plaque psoriasis. *Cosentyx* is the first approved human monoclonal antibody that selectively binds to circulating interleukin-17A, which plays an important role in driving the body's immune response in several disorders. In total, 50 countries have approved *Cosentyx* for the treatment of moderate-to-severe plaque psoriasis.

In November, *Cosentyx* was approved in Europe for the treatment of psoriatic arthritis and ankylosing spondylitis and we received FDA approval in January 2016.

Eye care

In 2015, we received approval for and launched three new intraocular lens (IOL) products under the *AcrySof* brand portfolio for patients undergoing cataract removal surgery: the *AcrySof IQ PanOptix* trifocal IOL was approved in the EU and the *AcrySof IQ ReSTOR* +2.5 Diopter IOL was approved in the US, both to address near, intermediate and distance vision. We also launched the *UltraSert* delivery system preloaded with the *AcrySof* IQ Aspheric Monofocal IOL in the US and Europe.

Biosimilars

Sandoz received FDA approval in March for *Zarxio* (filgrastim), the first biosimilar approved in the US under the new biosimilar pathway created in the Biologics Price Competition and Innovation Act of 2009. The drug, which stimulates white blood cell production in some cancer patients undergoing chemotherapy, is called *Zarzio* in Europe and is a biosimilar to Neupogen® from Amgen. The FDA and the European Medicines Agency accepted an application for etanercept, a biosimilar to Amgen's Enbrel® for several autoimmune diseases, including rheumatoid arthritis and psoriatic arthritis. The FDA also accepted an application for pegfilgrastim, a biosimilar to Amgen's Neulasta®, used against infections in patients receiving chemotherapy.

PERFORMANCE SUMMARY
continued

QUALITY

Our company's focus on quality continued to yield steady improvement in 2015, although more work remains to be done, particularly in the area of record-keeping – which is now the focus of a major training and awareness program.

Regulatory agencies carried out 192 inspections of Novartis facilities worldwide last year, with 98.4% resulting in a good or acceptable outcome, slightly above the level achieved in 2014. Additionally, in September the FDA closed out the May 2013 Warning Letter issued to our Sandoz site in Unterach, Austria.

These continuing strong inspection outcomes reflect our company's comprehensive review of quality standards to ensure they are applied consistently across all divisions and are updated based on feedback from health authority inspections.

In 2015, Novartis took a further step by creating information-sharing networks for experts from our company's 90 manufacturing sites, covering areas such as medical devices, microbiology and sterility assurance. These networks held six online conferences during the year to review lessons from the latest regulatory inspections.

Novartis also continued to strengthen the quality culture at every level of our organization by, for instance, holding regular quality days at production plants worldwide. Last year 68 of these events took place, involving a total of 30 500 employees. The inclusion of quality among the six core values on which every employee is assessed further indicates our company's commitment to continual improvement.

Despite this progress, there is still work to do. In October, the FDA issued a Warning Letter to our Sandoz sites in Kalwe and Turbhe in India. This letter related to documentation practices in Kalwe and to sterile manufacturing practices in Turbhe that were identified during an inspection in August 2014. Novartis took action immediately and has addressed a majority of the issues. We also intensified efforts to ensure accurate documentation across our company's Indian manufacturing operations.

The FDA's action gave added impetus to an educational and training program to raise employees' understanding of the importance of correct data handling. This began with the launch of an e-learning course to demonstrate how data ultimately define the quality, safety and efficacy of the medicines and devices on which patients depend.

In 2015, this training was rolled out to 45 000 employees across every function in our company that is subject to health authority regulations, followed by more in-depth courses for around 450 internal auditors and managers of data systems.

This program is being supplemented by the appointment of more than 100 data quality champions for all Novartis divisions at regional and local levels, who will be responsible for monitoring potential risks and preparing plans to anticipate and prevent them.

Our company is also becoming increasingly proactive in quality management. For example, our Alcon Division has developed a plan in anticipation of a major revision of medical devices legislation. This reform is aimed at improving patient safety and traceability, and is expected to be endorsed by the European Parliament in 2016. The Alcon initiative is designed to ensure that its products, processes and documentation are fully compliant well before the revised regulations take full effect in 2019.

Additionally, Novartis is one of 18 companies supporting an FDA initiative to develop industry-wide metrics for assessing manufacturing robustness and commitment to quality. The final guidance is due in 2016 and should help maintain drug supply to patients, while encouraging the industry to adopt state-of-the-art quality management systems.

98.4%

Regulatory inspections without major findings in 2015, underscoring our continued progress on quality

1m+

Job applications received in 2015 with 20 000+ hired

PEOPLE

In 2015, Novartis introduced a number of initiatives to help attract and develop talented people, strengthen our company's culture, and support our ability to execute our strategy. These initiatives contributed to ongoing progress in key areas of people management at Novartis.

Organizational design and change management

The Novartis portfolio transformation in 2015 resulted in major changes for thousands of employees across 70 countries who left our company, joined it, or took on new roles. This complex transition of staff was carefully planned, with close coordination among Novartis managers at the corporate, divisional, regional and country levels, as well as with managers at other companies involved. Novartis teams managing the transition implemented employee relations programs, coordinated compensation and benefits, and integrated systems to ensure the seamless transfer of personnel.

All the moves were completed successfully and on schedule, with no disruption to business. In countries where employees could decide whether to transfer, between 89% and 98% moved to the new organizations, showing this process was communicated and managed in an equitable way.

To further support our staff's ability to navigate these changes, we launched two new online training tools, which were used by more than 3 300 people in 2015. The Pharmaceuticals Division also organized 75 change leadership workshops for managers around the world.

Reinforcing talent, capabilities and leadership

A five-year talent and leadership strategy launched in 2015 aims to make people and culture key drivers of competitive advantage and business success. It focuses on anticipating business needs and planning more effectively, taking a more integrated approach when managing people and talent, and holding managers more accountable for supporting the development of their people. This strategy is designed to ensure that Novartis selects the best people, then trains, develops and promotes them in a way that benefits both our company and employees.

PEOPLE PERFORMANCE INDICATORS [1]

	2015	2014
Full-time equivalent positions / headcount [2]	**118 700 / 122 966**	117 809 / 122 113
Turnover: % voluntary / % overall	**7.3 / 13.5**	7.0 / 13.0
Voluntary turnover of superior performers (%)	**5.5**	5.1
Internal hires / external hires (%)	**44.8 / 55.2**	44.4 / 55.6
Women in management: % of management [3] / % of Board of Directors	**41 / 27**	40 / 18
Associate nationalities / associate nationalities in management [3]	**144 / 109**	147 / 109
Annual training hours per employee	**27.3**	27.0

[1] Continuing operations
[2] Headcount reflects the total number of associates in our payroll systems. Full-time equivalent adjusts headcount for associates working less than 100%. All data as of December 31
[3] Management defined locally

PERFORMANCE SUMMARY
continued

Novartis received more than 1 million job applications in 2015 and hired more than 20 000 staff. To help target the most suitable individuals, we created a global staffing organization that replaces the previous divisional structure and supports greater collaboration across our company.

Novartis launched an Enterprise Leadership Development program to improve succession planning for our company's most critical executive positions. The CEO and Head of Human Resources also mentor possible candidates for senior leadership roles during an annual retreat – a program that has helped prepare numerous executives for promotion, including three who subsequently joined the Executive Committee of Novartis (ECN). Through these and other initiatives, we aim to have a strong succession plan in place for three-quarters of top roles by 2020, up from around half today.

Our leadership development program uses a five-step process to define the skills and experience necessary for each role, identify and evaluate suitable candidates, craft development plans to bridge any gaps, and ensure that senior managers provide ongoing support to program participants.

Twenty-four executives went through the development program in 2015, and another 25 were identified for 2016. In addition, the ECN and divisional leadership teams hold regular talent reviews to support people development. We also established regional talent boards made up of senior business and human resources leaders to identify and develop senior managers at the country level in 2016. Our goal is to apply the same approach to all management positions.

Novartis recently decided to create a global learning organization to provide training in partnership with leading business schools. The programs will offer everything from general business and management training for a broad selection of employees, to targeted executive leadership development. They are central to improving the capabilities of our people to meet future business needs.

We also operate training initiatives – such as the Novartis universities in Asia, Russia and Africa – to address talent development needs in emerging markets. These programs boost associates' professional skills and include a mix of classroom and virtual training, sessions with Novartis leaders, mentoring, and presentations by experts in leadership and business. Nearly 20 000 associates have attended since 2008, including more than 4 500 in 2015.

Strengthening the Novartis culture

Novartis rolled out revised Values and Behaviors in 2015, reinforcing the culture of our company. Training programs taught people to evaluate their own and others' behavior related to the new values, which are innovation, quality, collaboration, performance, courage and integrity. These values are now embedded in all aspects of employees' lives at Novartis, from recruitment and development to promotions, performance assessments and bonus awards. They are one of the elements used to assess people's performance, from junior associates right up to ECN members. For instance, performance against the values became part of the incentive framework for our sales forces starting in 2016.

Our new values have been well received. In an employee survey, 82% of respondents described the values as memorable and 84% said the values give clear guidance that governs their behavior at work.

Novartis continues to make progress in the area of diversity and inclusion (D&I), as well. Last year the percentage of women in management increased slightly to 41%, while the number of nationalities represented in management grew to 109. In 2015, Novartis broadened the scope of responsibility for the Global Head of Diversity and Inclusion. A global D&I strategy, to be rolled out in 2016, aims to drive business and scientific innovation through D&I.

4 500+

Associates attended Novartis universities in Asia, Russia and Africa in 2015, supporting talent development in emerging markets

15

On- and off-patent medicines included in the new Novartis Access program that focuses on affordability and availability in developing countries

Also in 2015, our US affiliate Novartis Pharmaceuticals Corporation (NPC) became the first organization to be recognized for the second year in a row by DiversityInc magazine as the best company in the country for diversity.

Operational excellence

In 2015, Novartis began a major project to merge 21 learning, performance and talent systems into a single talent platform that will further expand our integrated human resources approach. This is a five-year, multimillion-dollar investment that will enable Novartis to manage and develop staff more efficiently, and better anticipate and plan for future needs.

CORPORATE RESPONSIBILITY

Expanding access to healthcare

Last year, we pursued a combination of approaches – philanthropy, zero-profit initiatives and social ventures – to expand access to our medicines for both infectious and non-communicable diseases (NCDs).

NCDs are growing in low- and middle-income countries, confronting these countries with a double disease burden of chronic and infectious diseases. Against this background, in 2015 we launched a new program, Novartis Access. It focuses on the affordability and availability of 15 on- and off-patent medicines addressing four key NCDs: cardiovascular diseases, diabetes, respiratory illnesses and breast cancer. A first in the industry, the portfolio is offered as a basket to governments and other public-sector healthcare providers at a price of USD 1 per treatment per month. It was launched in Kenya and Ethiopia, and we have plans to expand to about 30 countries in a few years, depending on demand.

Our social ventures, which are innovative business models to reach more patients in rural areas in the developing world, continued their expansion. In 2015, they reached 7.6 million people through more than 168 000 health education sessions in India, Kenya, Vietnam and Indonesia – which is 12% more sessions than in 2014. In addition, nearly 593 000

Fatima takes her 6-month-old son Foysal, who has pneumonia, for treatment in Dhaka, the capital of Bangladesh.

PERFORMANCE SUMMARY
continued

people received diagnosis and treatment. The total number of people who attended health camps and followed up to see a doctor was more than 980 000.

In 2015, the Novartis Malaria Initiative concluded a successful partnership with global charity Malaria No More on the Power of One campaign, a global digital fundraising campaign enabling the broad public to donate malaria treatments for children in Africa. Zambia received its 3 millionth pediatric malaria treatment in April, and 600 000 treatments were sent to Kenya to support clinics there.

We also renewed our pledge with the World Health Organization (WHO) to extend our donation of multidrug therapy medicines to treat leprosy through the year 2020. This five-year agreement includes treatments worth more than USD 40 million, with an additional amount of USD 2.5 million to support the WHO in handling the donation and logistics. Overall, the program is expected to reach about 1.3 million patients during the next five years.

Furthermore, in March, Sandoz launched a new program in Ethiopia called New Life & New Hope to improve maternal and child health and to reduce mortality associated with childbirth. Sandoz sponsored four Basic Emergency Obstetric and Newborn Care trainings for 80 midwives, impacting the care of approximately 40 000 pregnant women in the Addis Ababa area.

Also in 2015, Alcon supported 552 medical missions, reaching more than 390 000 patients with eye conditions, and restoring sight for nearly 35 000 patients through cataract surgery. Through the US Patient Assistance program, Alcon provided more than 7 800 patients with the eye care medications they needed.

Doing business responsibly

In June, the ECN approved our company's new environmental sustainability targets for 2020, which will further reinforce our environmental protection activities. The ECN also approved our first-ever internal carbon price, set at USD 100 per ton of carbon dioxide emitted. This will be used to select and prioritize capital projects that will most cost-effectively enable reductions in greenhouse gas emissions.

In 2015, we also put in place a corporate volunteering platform through which Novartis Group company associates can register a potential corporate responsibility (CR) project idea or sign up to become a corporate volunteer. Additionally, we established a USD 1 million Health Education & Capabilities Fund to provide financial support for internal projects focused on capability building, health education and disease awareness, mainly in Africa.

Our efforts to run a responsible business garnered significant recognition in 2015. We were included in:

- Corporate Knights' 2016 Global 100 Most Sustainable Corporations in the World Index
- DiversityInc's "Top 50 Companies for Diversity" list (NPC)
- Fortune's "World's Most Admired Companies" list, ranking as the second-highest pharmaceutical company
- Fortune's "Change the World" list, ranking among the top 10 companies that are "doing well by doing good"
- Major CR-related indices, including the Dow Jones Sustainability Index and the FTSE4Good

Commitment to integrity and compliance

In 2015, we took concrete steps to increase transparency and strengthen our ethical business practices, even as we dealt with ethical issues.

We launched a series of comprehensive, multiyear activities that aim to sharpen our ethical culture. They include new approaches

Novartis launched a series of multiyear activities that aim to sharpen our culture of ethics

to engaging healthcare professionals, as well as a reduction in promotional practices. Sales forces were informed about these changes in 2015, and the initiatives will be rolled out progressively worldwide through 2016 and beyond.

Integrity and compliance training

All Novartis Group company associates must complete compliance training. A global, cross-divisional compliance training curriculum is developed yearly; divisions, functions and countries then add any specific training for their own associates as required.

In 2015, four online courses were rolled out: Code of Conduct, Anti-Bribery, Conflict of Interest, and an Adverse Event Reporting refresher course.

Moreover, all newly hired associates worldwide were required to complete an onboarding e-training called Compliance@Novartis. This comprehensive course covered 17 subject areas and was sent to all new hires four weeks after the start of their employment.

Cases of misconduct

At Novartis, we take allegations of any inappropriate behavior very seriously, and we actively investigate these allegations and take appropriate disciplinary action. Associates can report suspected misconduct to the Business Practices Office (BPO). In 2015, the BPO investigated 1 299 reported cases; 755 were substantiated, including 343 that resulted in dismissals or resignations. The majority of cases investigated by the BPO involved fraud, such as fraudulent expense reporting and professional practices violations.

In November, NPC settled litigation in the Southern District of New York related to NPC's interactions with specialty pharmacies.

In Japan, our subsidiary Novartis Pharma K.K. received a business suspension order, as well as a business improvement order and instruction from Japanese health authorities for failures to promptly report cases where patients experienced adverse effects while taking our medicines.

A field research assistant carries out routine checks to screen for pneumonia, the leading cause of death among young children worldwide.

DIVISION PERFORMANCE
Pharmaceuticals

Our Pharmaceuticals Division maintained its innovation momentum in 2015. Major approvals and launches included Entresto *for heart failure;* Cosentyx *for psoriasis, psoriatic arthritis and ankylosing spondylitis; and a combination of* Tafinlar + Mekinist *for BRAF V600+ metastatic melanoma. Growth products contributed 44% of division net sales, underscoring our ongoing ability to rejuvenate our product portfolio.*

Our Pharmaceuticals Division develops innovative medicines to help people live longer with a better quality of life. Within Pharmaceuticals, we are focused on the areas of Oncology, Neuroscience, Retina, Immunology and Dermatology, Respiratory, Cardio-Metabolic, and Cell and Gene Therapies.

PERFORMANCE

Pharmaceuticals delivered net sales of USD 30.4 billion (–4%, +6% in constant currencies, or cc) as increased volumes, including from the oncology portfolio acquired from GlaxoSmithKline (GSK) in 2015, countered the impact of greater generic competition, which reduced sales by 7.0 percentage points.

Growth products generated USD 13.5 billion of division net sales, growing 33% (cc) compared to last year. These products – which include *Gilenya*, *Tasigna*, *Ultibro*, the combination of *Tafinlar + Mekinist*, *Jakavi, Revolade* and *Cosentyx* – contributed 44% of division net sales, compared to 36% in 2014.

Sales in emerging growth markets increased 9% (cc) to USD 7.8 billion.

Operating income was USD 7.6 billion (–10%, +5% cc) and included the effects of the acquisition of GSK's oncology portfolio, among other exceptional items.

Core operating income, which excludes certain exceptional items, was USD 9.4 billion (–1%, +14% cc), helped by our ongoing efforts to improve productivity and control costs. Core operating income margin improved by 2.4 percentage points in constant currencies. However, that was offset by 1.4 percentage points of negative impact from currency exchange rates, yielding a core margin of 30.9% of net sales.

Highlights in 2015 included regulatory approval in the US and EU for *Entresto* (formerly LCZ696) for chronic heart failure; *Farydak* for multiple myeloma; and *Tafinlar + Mekinist*, the first combination therapy for metastatic melanoma. *Cosentyx,* which was successfully launched in the US and EU in 2015 to treat psoriasis, also received approval in Europe to treat psoriatic arthritis and ankylosing spondylitis.

Oncology

Oncology sales rose 15% (+24% cc) to USD 13.5 billion, boosted by the newly acquired portfolio from GSK and continued growth in our existing products. By brand, growth drivers included

2015 NEWS HIGHLIGHTS

In July, the FDA approved *Entresto* for the treatment of heart failure with reduced ejection fraction, followed by EU approval in November.

In October, Novartis acquired Admune Therapeutics and signed licensing agreements with XOMA and Palobiofarma to expand its immuno-oncology R&D program.

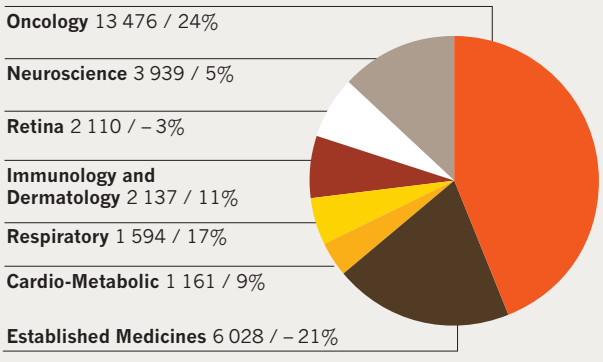
In November, Novartis received European approval for *Cosentyx* to treat patients with ankylosing spondylitis and psoriatic arthritis. This followed approval for psoriasis in January.

KEY FIGURES
(in USD millions, unless indicated otherwise)

			% Change	
	2015	2014	USD	cc[1]
Net sales	30 445	31 791	– 4	6
Operating income	7 597	8 471	– 10	5
Return on net sales (%)	25.0	26.6		
Core operating income[1]	9 420	9 514	– 1	14
Core return on net sales (%)	30.9	29.9		
Core Research & Development[1]	7 053	6 997	– 1	– 5
As a % of net sales	23.2	22.0		
Net operating assets	30 754	15 125	103	

[1] Constant currencies (cc) and core results are non-IFRS measures. An explanation of non-IFRS measures and reconciliation tables can be found starting on page 165.

PHARMACEUTICALS 2015 NET SALES BY FRANCHISE
(in USD millions and growth in % cc[1])



13.5 bn

Sales of growth products such as *Gilenya*, *Tasigna*, *Ultibro*, *Jakavi*, *Tafinlar + Mekinist*, *Revolade* and *Cosentyx* (USD)

13.5 bn

Total Oncology sales, driven by sales of products such as *Afinitor*, *Tasigna*, *Gleevec/Glivec*, *Jakavi* and the addition of GSK's portfolio (USD)

Afinitor, up 10% (cc) to USD 1.6 billion; *Tasigna*, up 16% (cc) to USD 1.6 billion; and *Jakavi*, up 71% (cc) to USD 410 million.

Neuroscience

Neuroscience sales were USD 3.9 billion (–4%, +5% cc), with *Gilenya* rising 12% (+21% cc) to USD 2.8 billion and more than offsetting declines in *Exelon/Exelon Patch* due to generic competition.

Retina

Sales in Retina were USD 2.1 billion (–16%, –3% cc), driven mainly by lower sales of *Lucentis,* which faced increased competitive pressure in Japan and some European markets.

Immunology and Dermatology

Sales in Immunology and Dermatology were USD 2.1 billion (0%, +11% cc). *Cosentyx* made a strong start after launching in February, reaching sales of USD 261 million. Additionally, *Zortress/Certican* rose 2% (+17% cc) to USD 335 million, and *Ilaris* increased 19% (+30% cc), helping offset declines in other products primarily stemming from generic competition.

Respiratory

Respiratory sales were USD 1.6 billion (+1%, +17% cc). We had sales of USD 0.6 billion (+19%, +40% cc) for our portfolio of drugs for chronic obstructive pulmonary disease (COPD), including *Onbrez Breezhaler/Arcapta Neohaler*, *Seebri Breezhaler* and *Ultibro Breezhaler.* Sales of *Xolair* reached USD 0.8 billion (–3%, +14% cc), including as a treatment for chronic hives.

Cardio-Metabolic

Entresto was launched in the US in the third quarter and full-year sales reached USD 21 million. *Galvus* sales were USD 1.1 billion (–7%, +8% cc).

Established Medicines

Established medicines such as *Diovan* (USD 1.3 billion, –40% cc) and *Exforge* (USD 1.0 billion, –15% cc) continued to see declines as a result of generic competition.

FURTHER DETAIL
See Condensed Financial Report at www.novartis.com/investors

Rickshaws provide transport for health workers as they search for pneumonia cases in Dhaka, Bangladesh.

Alcon

Alcon, the global leader in eye care, has embarked on a plan to reignite growth and accelerate innovation. Alcon was challenged in 2015 by increased competition across product segments and weaker performance in emerging markets, particularly Asia.

Globally, more than 285 million people live with vision impairment and blindness. More than 80% of vision problems can be prevented, treated or cured provided patients have access to treatment.

In a world of rapidly aging populations and growing need for eye care, Alcon is well positioned to continue enhancing quality of life by helping people see better. Alcon's Surgical, Ophthalmic Pharmaceuticals and Vision Care businesses offer the world's widest spectrum of eye care products.

PERFORMANCE

Alcon net sales in 2015 were USD 9.8 billion (–9%, –1% in constant currencies, or cc). Regionally, sales were flat in Japan and rose in Latin America and the Caribbean. In Europe, the Middle East and Africa, sales rose 1% (cc), with strong sales of recently launched contact lenses, including *Dailies Total1* and *Air Optix Colors*, offset by declines in surgical equipment.

Sales in North America declined 3%, mainly due to increased generic competition for some pharmaceutical products and soft surgical equipment sales. In Asia and Russia, sales declined 5% (cc), driven by a significant market slowdown, with weak performance in China, India and Southeast Asia.

Operating income was USD 0.8 billion (–50%, –20% cc).

Core operating income, which excludes certain items, was USD 3.1 billion (–20%, –7% cc), impacted by lower sales, higher spending (primarily on marketing and sales), investments in product development, and increased provisions for bad debt in Asia. Core operating income margin declined 2.1 percentage points in constant currencies and currency exchange rates had a negative impact of 1.9 percentage points, yielding a core margin of 31.2% of net sales.

To accelerate growth, we are taking concerted action on two fronts. For the Surgical and Vision Care businesses, we have identified key actions as part of a growth plan. They include steps to optimize innovation in intraocular lenses (IOLs) for cataract surgery, prioritizing and investing in the development of promising new products, and improving the effectiveness of our sales force.

In addition, we plan to strengthen our ophthalmic medicines business by transferring pharmaceutical products from Alcon to our Pharmaceuticals Division, combining expertise in pharmaceuticals development and marketing with the strong Alcon brand.

2015 NEWS HIGHLIGHTS

In February, the US FDA approved *Pazeo* to treat allergy-related itchy eyes.

In June, Alcon unveiled *AcrySof IQ PanOptix* trifocal, an IOL to address near, intermediate and distance vision in cataract patients.

In July, Alcon launched *UltraSert*, a preloaded lens delivery system for use in cataract surgery.

KEY FIGURES

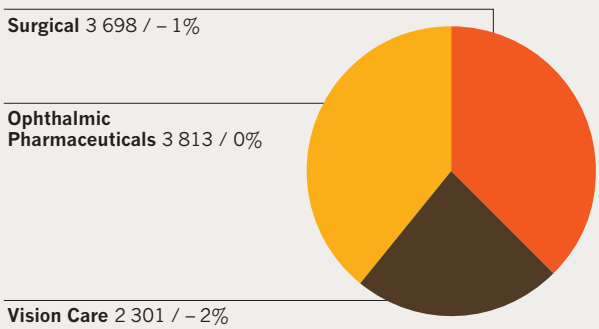
(in USD millions, unless indicated otherwise)

			% Change	
	2015	2014	USD	cc[1]
Net sales	9 812	10 827	– 9	– 1
Operating income	794	1 597	– 50	– 20
Return on net sales (%)	8.1	14.8		
Core operating income [1]	3 063	3 811	– 20	– 7
Core return on net sales (%)	31.2	35.2		
Core Research & Development [1]	909	903	– 1	– 4
As a % of net sales	9.3	8.3		
Net operating assets	37 927	39 785	– 5	

[1] Constant currencies (cc) and core results are non-IFRS measures. An explanation of non-IFRS measures and reconciliation tables can be found starting on page 165.

ALCON 2015 NET SALES BY FRANCHISE

(in USD millions and growth in % cc[1])



9.8 bn

Alcon net sales (USD)

Surgical

Surgical franchise sales were USD 3.7 billion (–9%, –1% cc). Solid sales of cataract and vitreoretinal disposable surgical supplies were offset by competitive pressure on IOL sales, as well as a slowdown in equipment purchases in the US and emerging markets, particularly Asia. Launches in 2015 of our *UltraSert* pre-loaded and *PanOptix* trifocal IOLs in Europe, as well as regulatory approval of *UltraSert* pre-loaded IOLs in the US, provide an opportunity to renew growth in this segment.

Ophthalmic Pharmaceuticals

Ophthalmic Pharmaceuticals sales were USD 3.8 billion (–9%, 0% cc). In glaucoma products, strong performance of fixed-dose combination products, including *Azarga* and *Simbrinza,* was offset by generic competition for monotherapies. *Systane* eye drops to treat the symptoms of dry eye saw sales grow in the US and Europe, the Middle East and Africa, with softer sales across emerging markets. Sales of allergy, nasal and ear medicines declined, driven by continued generic competition in the US.

Vision Care

Vision Care sales were USD 2.3 billion (–10%, –2% cc). Contact lens sales reached USD 1.7 billion (–8%, +1% cc), with strong sales of innovative lenses, particularly *Dailies Total1* and *Air Optix Colors,* offset by declines in older products. Sales of contact lens solutions were USD 0.6 billion (–14%,–8% cc), affected by ongoing market shifts to daily disposable lenses, as well as competitive pressure in the US.

FURTHER DETAIL

See Condensed Financial Report at www.novartis.com/investors

Mothers wait in a clinic in Dhaka, Bangladesh for treatment for their children, who are suffering from pneumonia.

Sandoz

Sandoz delivered solid growth in 2015 in constant currencies, boosted by strong sales in all key regions and continued success of its leading biopharmaceutical portfolio, which was reinforced by the US launches of Glatopa *for multiple sclerosis and biosimilar* Zarxio *for cancer patients.*

Sandoz plays an important role in the Novartis strategy of offering a range of products to patients and healthcare providers around the world. The division has three franchises – Retail Generics, Biopharmaceuticals and Oncology Injectables, and Anti-Infectives – and helps make affordable, high-quality medicines available to more people.

PERFORMANCE

In 2015, Sandoz had net sales of USD 9.2 billion (–4%, +7% in constant currencies, or cc, from the prior year), driven by a 15.0 percentage-point increase in volume, more than offsetting 8.0 percentage points of price erosion. Performance was driven by strong sales growth in the US (+10% cc), Asia Pacific (+13% cc), Latin America (+18% cc), and Middle East and Africa (+13% cc). Sales in Western Europe grew 3% (cc), with Germany growing 5% (cc).

Sandoz continued to strengthen its global leadership position in biopharmaceuticals, which include medicines that are difficult to develop and manufacture. In June, Sandoz launched *Glatopa* – the first generic competitor to Copaxone® 20 mg – in the US. And in September in the US, Sandoz also launched *Zarxio,* which is the first biosimilar approved by the US Food and Drug Administration (FDA) under new regulations.

Operating income was USD 1.0 billion (–8%, +1% cc). Core operating income, which excludes certain exceptional items, increased 6% (+17% cc) to USD 1.7 billion. Core operating income margin increased 1.5 percentage points in constant currencies and currency exchange rates had a positive impact of 0.2 percentage points, yielding a core margin of 18.1% of net sales.

Retail Generics

In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals. This franchise includes the specialty areas of dermatology, respiratory and ophthalmics, as well as finished dosage forms of anti-infective products sold under the Sandoz name. Retail Generics sales worldwide were USD 7.2 billion (–9%, +2% cc). New product launches included US-authorized generics of our Pharmaceuticals Division's *Exelon Patch* and *Exforge*, as well as bivalirudin, an injectable anticoagulant.

2015 NEWS HIGHLIGHTS

In March, *Zarxio* (filgrastim) became the first biosimilar approved under new biosimilar rules in the US.

In October, Sandoz confirmed the FDA accepted our application for etanercept, a biosimilar to Amgen's Enbrel®, for autoimmune diseases. Acceptance of our application in the EU followed in December.

In November, Sandoz announced FDA acceptance of the application for pegfilgrastim, a biosimilar to Amgen's Neulasta®, to fight infection in patients receiving chemotherapy.

KEY FIGURES

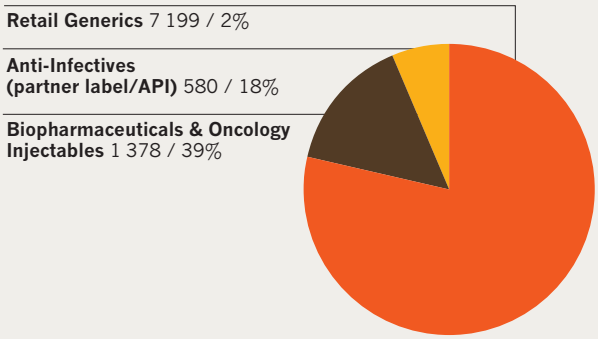
(in USD millions, unless indicated otherwise)

			% Change	
	2015	2014	USD	cc[1]
Net sales	9 157	9 562	– 4	7
Operating income	1 005	1 088	– 8	1
Return on net sales (%)	11.0	11.4		
Core operating income[1]	1 659	1 571	6	17
Core return on net sales (%)	18.1	16.4		
Core Research & Development[1]	776	823	6	– 7
As a % of net sales	8.5	8.6		
Net operating assets	14 143	15 322	– 8	

[1] Constant currencies (cc) and core results are non-IFRS measures. An explanation of non-IFRS measures and reconciliation tables can be found starting on page 165.

SANDOZ 2015 NET SALES BY FRANCHISE

(in USD millions and growth in % cc[1])



+39%

Increase in sales of biopharmaceuticals (cc)

1.7 bn

Sandoz core operating income, supported by strong sales growth in key markets (USD)

Biopharmaceuticals and Oncology Injectables

In Biopharmaceuticals, Sandoz develops, manufactures and markets protein- and biotechnology-based products known as biosimilars, as well as *Glatopa*. Sandoz also provides biotechnology manufacturing services to other companies. Sales of biopharmaceuticals rose 25% (+39% cc) to USD 772 million. Sandoz further strengthened its leadership in biosimilars in 2015 with the US approval of *Zarxio* (filgrastim), used to fight infection in cancer patients receiving chemotherapy.

Sandoz is the global market leader in biosimilars with three products that continue to see strong growth in their respective categories: *Omnitrope*, a human growth hormone; *Binocrit,* an erythropoiesis-stimulating agent; and filgrastim under the brand names *Zarzio* outside the US and *Zarxio* in the US. We continued in 2015 to build our portfolio of biosimilars. The FDA and European Medicines Agency confirmed acceptance of our applications for etanercept, a proposed biosimilar to Amgen's Enbrel®, which treats autoimmune diseases such as rheumatoid arthritis and psoriasis. The FDA also accepted our application for pegfilgrastim, a proposed biosimilar to Amgen's Neulasta®, used to reduce the chance of infection in cancer patients receiving chemotherapy. Sandoz has five biosimilars in Phase III development or registration preparation.

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.

Anti-Infectives

Sandoz manufactures pharmaceutical ingredients and intermediates – mainly antibiotics – for sale under the Sandoz name and to third-party customers. Total Anti-Infectives sales were USD 1.4 billion, up 9% (cc) driven by a strong flu season and restored production capacity after 2014 quality upgrades. Sales of finished dosage forms sold under the Sandoz name reached USD 860 million. Anti-infectives sold to third parties for sale under their own name reached USD 580 million.

FURTHER DETAIL
See Condensed Financial Report at www.novartis.com/investors

Six-month-old Foysal received treatment for pneumonia at a clinic and hospital in the capital of Bangladesh.

CONTINUED FROM PAGE 23

Undernourished children are most at risk from this common lung infection, as are those living in overcrowded communities such as the densely populated Kamalapur area around Dhaka's main railway station.

A team of nearly 60 field research assistants is based there, dedicated to reducing the death toll from what the World Health Organization calls the forgotten pandemic of pneumonia. They are supported by around 30 health workers whose distinctive yellow uniforms identify them as representatives of icddr,b, an organization established 50 years ago in Dhaka as the International Centre for Diarrhoeal Disease Research, Bangladesh.

Since then the organization has expanded its focus to include many of the world's most pressing health concerns, and it now has a global reputation for research into the health challenges faced by developing countries – from infectious diseases to malnutrition and the health effects of climate change.

The organization's activities include both academic research and patient care. In the case of pneumonia, the field research assistants visit up to 150 households each week to monitor for signs of the disease. At the same time, they gather data that will increase understanding of the causes, transmission and possible prevention of pneumonia. The yellow-clad health workers join them on home visits and also support the clinical team in caring for patients.

Regular monitoring is vital because pneumonia can be treated effectively using appropriate antibiotics such as amoxicillin, but this relies on prompt diagnosis and treatment. All too often, mothers fail to recognize that symptoms such as fever and rapid breathing could indicate their child has the early stages of the disease.

When a suspected pneumonia case is identified, the field teams escort the mother and child to the organization's clinic in Kamalapur, normally traveling by rickshaw – which is the main form of public transport. More severe cases are referred to the organization's hospital in Dhaka.

The global fight against pneumonia is supported by Sandoz, the generics division of Novartis, which supplied millions of tablets of a special child formulation of amoxicillin to help children worldwide. The medicine was given to the United Nations as part of its Every Newborn Action Plan, designed to eliminate preventable deaths among babies.


1


4

The global fight against pneumonia is supported by Sandoz, the generics division of Novartis, which supplied millions of tablets of a special child formulation of amoxicillin to help children worldwide

1 Health workers travel by rickshaw on their rounds visiting homes to check for possible cases of pneumonia.
2 They interview Fatima, the mother of 6-month-old Foysal, who has symptoms of pneumonia.
3 A blood sample is taken from Foysal at the clinic before he goes to the hospital, where he later recovered, thanks to antibiotics.
4 The medical team, including deputy project coordinator Dr. Kamrun Nahar (left), examines X-rays at the Kamalapur clinic.
5 Fatima takes Foysal to the hospital in a rickshaw.

INNOVATION

CONTENTS

PHOTO ESSAY

Priming the body's own defenses against cancer

Novartis is working with the University of Pennsylvania in the US to develop a new personalized cancer treatment called chimeric antigen receptor T-cell therapy, or CART for short. Much work will be needed to develop this experimental technology, but if researchers are successful, it has the potential to alter the course of cancer care.

Researchers take patients' T-cells, which are white blood cells that help fight infections, and genetically modify them in super-clean laboratories to recognize a protein expressed by cancer cells. Researchers then reinfuse these T-cells into the patients' blood where they aim to hunt down and eradicate tumor cells.

→ CONTINUED ON PAGE 59

INNOVATION OVERVIEW

During the past year, we continued to sharpen our research and development strategy and execution. We are prioritizing our most promising new drug candidates and focusing on disease areas where there is patient need and where scientific advances present new opportunities for breakthroughs. Our researchers continue to push the boundaries of science, working to broaden our understanding of diseases, and developing novel medicines and products to address high unmet medical need.

We believe innovation that produces breakthrough medicines, devices and solutions will be critical in the healthcare industry in the coming years as demographic trends increase pressure on health systems to produce the best results at the lowest overall cost.

To drive innovation at Novartis, in 2015 we invested USD 8.9 billion in research and development for new drugs and medical devices, or 18% of net sales. More than 200 research and development projects are underway, 137 of them in the Pharmaceuticals Division.

Our research and development strategy sets clear priorities. We concentrate on therapeutic areas where there is patient need and where scientific advances present new opportunities, including oncology, cardiovascular, eye care, biosimilars and neuroscience.

We are also exploring new scientific frontiers in areas with great potential for innovation, including immuno-oncology, aging and regenerative medicine, and infectious diseases.

DRUG DISCOVERY

The Novartis Institutes for BioMedical Research (NIBR) is the innovation engine of Novartis. More than 6 000 NIBR scientists and physicians worldwide work to discover potentially groundbreaking therapies, using molecular signaling pathways – the communication highways inside cells – as a guide for drug discovery. When new molecular entities have been qualified for testing in humans, small-scale proof-of-concept studies are conducted to get an early read on a drug's safety and effectiveness.

More than 80% of compounds in development at Novartis were discovered internally. Likewise, two of the most significant Novartis medicines to receive approval from the US Food and Drug Administration in 2015, *Cosentyx* for psoriasis, and *Entresto* for chronic heart failure, were in-house discoveries.

Novartis maintains alliances with other research organizations to augment in-house capabilities, including more than 300 with academic institutions and more than 100 with biotechnology and pharmaceutical organizations. Novartis added 41 new alliances in 2015.

One example was in gene editing. Novartis formed collaborations with Intellia Therapeutics and Caribou Biosciences to develop expertise in CRISPR, a technology likened to a molecular scalpel for genomes. It enables researchers to alter the genome of a living cell in a specific and reproducible fashion, offering unique opportunities for drug discovery.

DRUG DEVELOPMENT

After a successful proof-of-concept study, new medicines move into clinical development. Development processes at Novartis vary by division because of the different types of products involved. In the Pharmaceuticals Division, in Ophthalmic Pharmaceuticals at Alcon and at Sandoz for biosimilars, Novartis scientists build development plans with practicing physicians and health authorities.

Clinical trials can involve large numbers of patients and can last from two to five years, depending on the indication and patient population. For other products, such as medical devices or generic drugs, the process can be much shorter. At Alcon, researchers develop new devices and surgical instruments with eye surgeons and research institutes. Development at Sandoz for generics typically involves small clinical studies to show the generic version is equivalent to the original branded medicine.

Even when a proof-of-concept study yields a positive result, rigorous prioritization means a therapy may not be developed at Novartis. In such cases, we may license the compound to another company. For example, in 2015 we sold three mid-stage experimental therapies to Mereo BioPharma Group in exchange for a

8.9 bn

Group research and development spending in 2015, amounting to 18% of net sales (USD)

200 +

Research and development projects underway at Novartis

More than 80% of compounds in development at Novartis were discovered internally

25

Biological pathways associated with cancer progression under study at Novartis

14 m

New cases of cancer worldwide every year, a figure the WHO believes will rise 70% by 2035

19.5% equity investment in Mereo – BPS804 for brittle bones, BCT197 for respiratory ailments, and BGS649 for low testosterone levels in obese men.

ONCOLOGY

Cancer remains a serious public health challenge, with 14 million new cases a year and 8.2 million cancer-related deaths annually, according to the World Health Organization (WHO). The number of new cancer cases is expected to rise about 70% within the next two decades – with more than 60% of these in Africa, Asia and Latin America.

It is a critical time in cancer research and development, with groundbreaking advancements happening at a rapid pace. We take a holistic approach to oncology research, growing our presence in targeted treatments and investing significantly in immuno-oncology.

Our focus is on five common types of cancer – melanoma, hematology, lung, breast and renal – with a continued interest in other types where we see significant unmet medical need. We actively pursue the development of novel treatments across our targeted therapy and immuno-oncology portfolios, along with revolutionary cell therapy treatments such as chimeric antigen receptor T-cell (CART) technology.

Melanoma

Data show that combinations of multiple therapies can lead to better outcomes for patients, short-circuiting cancer's ability to use an alternative disease pathway and continue growing. In melanoma, we have seen the important role the mitogen-activated protein kinase (MAPK) signaling pathway, also known as the RAS-RAF-MEK-ERK pathway, plays in cell proliferation.

Mutations in this pathway have the potential to make normal cells become cancerous, and mutations of the RAF protein, BRAF, are found in about half of all melanomas. The combination of *Tafinlar* (dabrafenib), targeting BRAF, and *Mekinist* (trametinib), targeting MEK – another key protein in this pathway – has demonstrated a significant overall survival benefit in two Phase III studies for patients with BRAF V600E/K mutation-positive metastatic melanoma.

This combination was approved in both the EU and the US in 2015. We are also focusing on the study of a triple combination approach with *Tafinlar* + *Mekinist* and immuno-oncology therapy.

Hematology

We continue to develop treatments for blood cancers. We expanded our portfolio this year with a new indication for *Jakavi* in polycythemia vera, a disorder of the bone marrow; the approval of *Farydak* for multiple myeloma; and the addition of *Promacta*, an oral medicine that increases the number of platelets in the blood.

In chronic myelogenous leukemia we are studying ABL001, a small molecule designed to inhibit BCR-ABL – an abnormal gene found in most patients with the disease. Researchers studying drug resistance found cancer cells can sometimes reactivate BCR-ABL after treatment, enabling them to resume their destructive activity. Because ABL001 has a novel mechanism of action, it may prevent the cancer cells from doing this and becoming resistant to existing drugs. Numerous combination approaches of ABL001 with other therapies, including immuno-oncology, are being explored for future study.

INNOVATION OVERVIEW
continued

Lung
Zykadia (ceritinib) gained EU approval in May for certain patients with anaplastic lymphoma kinase-positive (ALK+) forms of non-small cell lung cancer. This is a new option for patients whose disease has progressed or who are intolerant to an existing therapy, and it specifically targets the genetic makeup of their cancer. We are studying additional mutational targets using our *Tafinlar* + *Mekinist* combination therapy and INC280, our c-MET inhibitor. A recent Phase II study of *Tafinlar* + *Mekinist* showed the combination approach was effective in shrinking tumors in patients with non-small cell lung cancer.

We are researching a potential combination therapy that involves a targeted treatment and an immuno-oncology treatment. We have three combinations with Opdivo®, a PD-1 checkpoint inhibitor, including *Zykadia*, INC280 and EGF816, as part of a collaboration with Bristol-Myers Squibb Co. Clinical trials began early in 2015 to evaluate their efficacy in treating non-small cell lung cancer.

Advanced breast cancer
We are exploring molecules that target the PI3K/mTOR pathway, including BKM120 and BYL719, to treat advanced breast cancer. We are also identifying other pathways, such as through LEE011, a small-molecule inhibitor of cyclin-dependent kinase 4 and 6 (CDK4/6).

CDK4 and CDK6 are both components of a switch that controls the cell cycle. Early data suggest LEE011 could benefit patients with advanced breast cancer in combination with standard endocrine therapy.

We are also exploring the possibility of inhibiting multiple pathways simultaneously along with endocrine therapy.

Renal cell carcinoma
We are examining the role immuno-oncology can play in the treatment of renal cell carcinoma. Currently, we have an early study of *Votrient* in combination with Keytruda® (MK3475, a PD-1 checkpoint inhibitor) from Merck & Co., and we are exploring the potential of immuno-oncology and immuno-oncology combinations.

Immuno-oncology
Our entry into immuno-oncology is focused on understanding the mechanisms involved in a protective immune response. We have six programs in clinical trials and five more expected to enter the clinic by the end of 2016. Our portfolio includes programs based on checkpoint inhibitors for three particular proteins – PD1, TIM3 and LAG3 – acquired from CoStim Pharmaceuticals in 2014.

Also in early development is a novel form of small-molecule therapies called cyclic dinucleotides (CDNs). These next-generation cancer immunotherapies target a cell-signaling pathway known as stimulator of interferon genes (STING). While checkpoint inhibitors are potent in specific tumor types, preclinical studies with Aduro Biotech indicate CDNs may help the body recognize and fight several cancers. We are also collaborating with partners to develop immuno-oncology and targeted therapy combinations.

In October, we added IL-15, adenosine receptor and TGF-beta inhibition programs through the acquisition of Admune Therapeutics as well as licensing agreements with XOMA and Palobiofarma. All three will be explored as monotherapies and in combination with CART technology, novel checkpoint inhibitors, STING agonists and our portfolio of targeted therapies.

Cell and gene therapy
Novartis is exploring novel therapies to prime the immune system against tumors or malignancies, including CART technology, being developed with the University of Pennsylvania in the US.

This novel therapy takes patients' white blood cells and re-engineers them to identify and destroy specific cancer cells. CTL019 is in Phase II development for the treatment of relapsed/refractory pediatric acute lymphoblastic leukemia (ALL) and diffuse large B-cell lymphoma (DLBCL).

We continue to work on this revolutionary approach to tackling cancer and we are expanding our trials beyond the US to Europe. We boosted our T-cell processing capacity in 2015, opening a new manufacturing facility in Morris Plains, New Jersey in the US.

6

Immuno-oncology programs in clinical trials with five more expected to enter the clinic by the end of 2016

21%

Reduction in heart failure hospitalizations among patients using *Entresto* in a clinical trial, a clear benefit over existing treatments

26 m+

People worldwide living with heart failure

CARDIOVASCULAR

Heart failure, which affects more than 26 million people worldwide, is a difficult-to-treat chronic condition in which the heart cannot pump enough blood around the body. It is the leading cause of hospitalization among adults over age 65 in the Western world. About 25% of patients with the disease die within a year of diagnosis and 50% are dead within five years.

Approval in 2015 in the US and EU of *Entresto*, formerly LCZ696, marked a significant advance for patients with chronic heart failure with reduced ejection fraction – when the heart muscle does not contract effectively.

A major study showed *Entresto* reduced the risk of death from cardiovascular causes as well as hospitalizations due to heart failure by 20% and 21%, respectively. LCZ696 is also being assessed in patients who have heart failure with preserved ejection fraction, another form of the disease.

Furthermore, a clinical trial studying RLX030 (serelaxin) in acute heart failure is expected to report in 2017. The study may show whether serelaxin can reduce death and hospitalization rates for patients who have already experienced an episode of acute heart failure.

Coronary artery disease is another area of high unmet medical need. Despite advances in secondary prevention, many patients remain at high risk of stroke, recurrence of heart attacks, and cardiovascular death due to vascular inflammation. ACZ885 is a selective interleukin-1 beta inhibitor currently marketed for the treatment of auto-inflammatory diseases. A trial in more than 10 000 patients who previously had a heart attack is underway. It will determine whether blocking systemic inflammation in these patients can reduce the risk of further cardiac problems. If positive, it will provide a novel cytokine-based therapy for the secondary prevention of cardiovascular disease.

Novartis is also developing new digital technologies to help heart failure patients adhere to their treatment and monitor vital signs. In November, we launched Heart Partner, a heart failure smartphone application for patients and caregivers to help manage treatment. This highlights our commitment to go beyond the pill and ensure the best possible outcomes for patients.

RESPIRATORY

Some respiratory diseases are so severe patients have to fight for breath while carrying out simple tasks. Novartis is developing treatments for several respiratory illnesses, including chronic obstructive pulmonary disease (COPD), a life-threatening yet preventable and treatable lung disease affecting 210 million people worldwide and caused mainly by smoking and air pollution.

In October, we received US approval for QVA149 in patients with moderate-to-severe COPD. QVA149 combines two active substances, glycopyrronium bromide and indacaterol. Two pivotal studies showed this combination improved lung function compared to the individual components. Outside the US, QVA149 has been marketed as *Ultibro Breezhaler*, and a large study comparing it with the widely used medicine Seretide® showed *Ultibro* reduced the risk of COPD exacerbations. In early 2016, Novartis announced a collaboration with Qualcomm to provide patients with real-time access to data on their use of the inhaler used in several Novartis COPD treatments, including *Ultibro Breezhaler*. Patients will access the data transmitted wirelessly by the Qualcomm digital monitor via a smartphone and Novartis COPD mobile application.

Asthma remains the most common respiratory disease worldwide and Novartis aims to expand its portfolio beyond *Xolair*. A pivotal trial of QVM149 started in 2015, studying a once-daily combination of drugs called long-acting beta agonists and long-acting muscarinic agents with an inhaled corticosteroid in a single device.

A Phase III study for QAW039, a potential first-in-class oral anti-inflammatory treatment for asthma, is also underway. This has the potential to reduce asthma exacerbations and has a safety profile that may be suitable for children, for whom asthma is the most common chronic disease.

INNOVATION OVERVIEW
continued

Another potential therapy, QGE031 (ligelizumab) is in Phase II trials. It could become the first of a new generation of anti-IgE antibody treatments for severe asthma, chronic urticaria (hives) and other indications. IgE (immunoglobulin E) has been implicated in mediating many chronic inflammatory and allergic diseases. Data show QGE031 achieved better suppression of IgE than *Xolair* and that deeper IgE suppression translates to superior efficacy in blocking allergic responses in patients' skin and lungs.

IMMUNOLOGY AND DERMATOLOGY

Immune system disorders affect hundreds of millions worldwide and can severely impact quality of life and even life expectancy.

In early 2015, we received approval in the US and EU for *Cosentyx*, a monoclonal human antibody targeting a protein called interleukin-17A (IL-17A) for the treatment of moderate-to-severe plaque psoriasis in adults. As IL-17A stimulates inflammation, we are also pursuing *Cosentyx* for use in immune-related disorders such as psoriatic arthritis (PsA) and ankylosing spondylitis (AS), a debilitating chronic condition that leads to excessive formation of new bone, resulting in spinal damage. A recent Phase III study in AS showed significant improvement in patient symptoms after one year of treatment. *Cosentyx* was approved for both AS and PsA in Europe in 2015, and in the US in January 2016.

Work is also underway with QAW039 for atopic dermatitis, the most common form of eczema, following a positive proof-of-concept trial in adults with a moderate-to-severe form of the disease.

NEUROSCIENCE

In neuroscience we are studying conditions such as multiple sclerosis (MS), neuropathic pain, sporadic inclusion body myositis (sIBM), migraine and Alzheimer's disease. Disorders of the brain, including forms of dementia and mental illness, affect hundreds of millions worldwide.

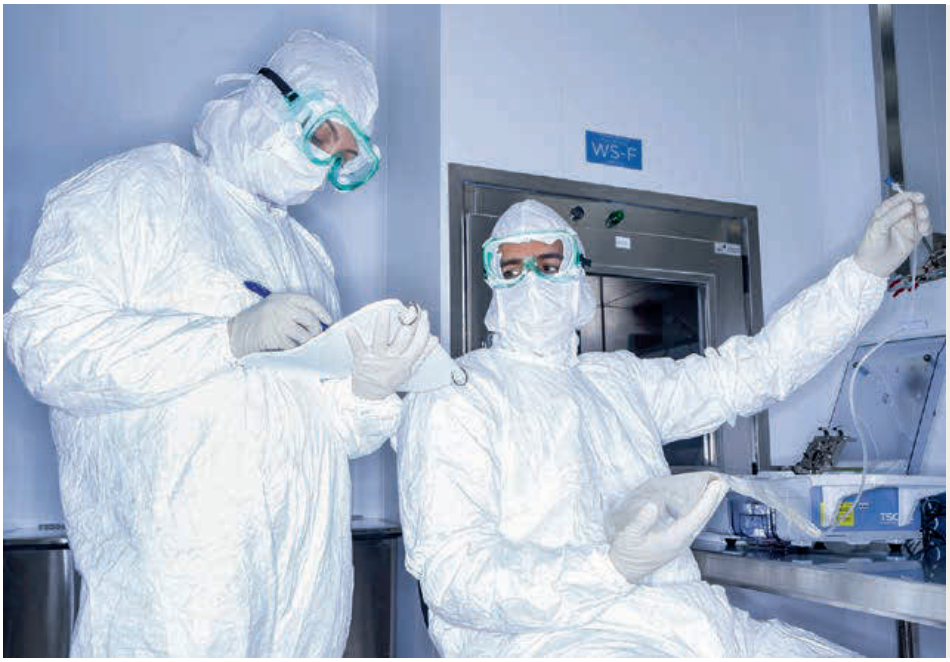
Multiple sclerosis

Novartis is studying ways of treating progressive forms of MS, which are the most significant source of disability and for which there are no approved therapies.

We are studying BAF312, or siponimod, a second-generation selective S1P1/5 receptor modulator, in the largest Phase III trial in secondary progressive MS.

Cosentyx was shown to be effective for three indications: psoriasis, psoriatic arthritis and ankylosing spondylitis

We are studying BAF312, or siponimod, in the largest Phase III trial in secondary progressive MS



Research scientists wear multiple layers of protective clothing as part of a strict anti-contamination protocol at the Novartis cell processing facility in Morris Plains, New Jersey in the US.

44 m

People globally have Alzheimer's disease or a related dementia

We are also working to broaden our portfolio of MS treatments. In 2015, we acquired the remaining rights to ofatumumab, which we currently market for oncology indications as *Arzerra,* from GlaxoSmithKline. Ofatumumab is a human monoclonal antibody targeting the CD20 protein and being developed for relapsing-remitting MS. Phase II results show a significant reduction in the cumulative number of new brain lesions in patients with MS, and Phase III trials will start in 2016. We see ofatumumab as offering a significant potential benefit for patients.

We also continue to explore the IL-17 pathway, associated with clinical disease activity in patients with MS, with CJM112.

Neuropathic pain

Nerve damage caused by physical injury or diseases such as diabetes, MS and shingles can result in a complex chronic pain state called neuropathic pain. This condition affects up to 7–8% of the adult population, and 40% of patients do not respond to existing treatments. We are investigating EMA401, a novel angiotensin II type 2 receptor (AT2R) antagonist, following our acquisition of Spinifex Pharmaceuticals. EMA401 works in the spinal cord outside the blood brain barrier and may avoid side effects such as dizziness or confusion.

Muscle wasting

We are developing BYM338 (bimagrumab) for patients with sIBM, a rare muscle wasting disorder. Currently in Phase III clinical trials for sIBM, we are also studying its potential for patients with age-related sarcopenia. This degenerative condition, usually characterized by a significant decrease in muscle mass and increased frailty, affects 30% of those aged 60–70 and more than 50% of people over 80.

Migraine

Migraine is a severe headache condition affecting more than 10% of the population worldwide. Novartis is collaborating with Amgen on potential treatments for this leading cause of disability. They include AMG 334, a fully human monoclonal antibody; AMG 301; and potentially another Amgen investigational compound. AMG 334 is in Phase III trials and AMG 301 is in Phase I trials.

Alzheimer's disease

About 44 million people globally have Alzheimer's disease or a related dementia. Current treatments manage symptoms but cannot alter the course of the disease. Once the disease is detected, neurological damage to the patient is irreversible and slow decline in memory, thinking and reasoning skills results.

We are investigating potential new therapies and studying patients with a genetic risk of developing Alzheimer's, for example in partnership with Amgen to develop a BACE inhibitor program in Alzheimer's. This includes the oral therapy CNP520 (which is also part of a major collaborative study with the Banner Alzheimer's Institute in people with a genetic risk of developing this disease). BACE inhibitors block an enzyme called beta-secretase that is involved in the production of amyloid beta, a protein that creates brain plaques, considered to be a major cause of Alzheimer's. This research will assess the efficacy of CNP520 and of CAD106 in limiting the build-up of protein aggregates linked to the emergence of Alzheimer's. CAD106 is an anti-amyloid active immunotherapy that has completed Phase IIa trials and is not included in the collaboration with Amgen.

INNOVATION OVERVIEW
continued

EYE CARE

Alcon, the eye care division of Novartis, is developing innovative products that enhance quality of life by helping people see better. According to the WHO, more than 80% of all visual impairment can be prevented, treated or cured. We offer a broad portfolio of products, including surgical devices and platforms to treat cataracts, refractive errors and retinal conditions; medicines for chronic diseases such as glaucoma and dry eye; compounds in development for the potential treatment of age-related macular degeneration (AMD); as well as contact lenses and lens care solutions.

Surgical

Alcon develops ophthalmic surgical equipment, intraocular lenses (IOLs) and disposable surgical equipment to treat cataracts, a clouding of the natural lens of the eye that is the leading cause of preventable blindness worldwide. In addition, Alcon offers equipment to assist surgeons performing corneal refractive and vitreoretinal surgical procedures.

Alcon's most recent innovations in cataract treatment are *PanOptix*, a new advanced-technology IOL that addresses near, intermediate and distance vision, as well as the *UltraSert* pre-loaded IOL device that enables surgeons to insert IOLs with more precision and control during surgery, further enhancing patient outcomes. We are also in late-stage development of our new next-generation IOL polymer material, *Clareon*, which maintains the benefits of our *AcrySof* platform, including refractive and rotational stability, unfolding characteristics, improved visual outcomes, and a reduction in glistenings and surface haze.

Ophthalmic pharmaceuticals

In ophthalmic pharmaceuticals, we address chronic and progressive eye diseases such as glaucoma, dry eye and ocular infections. A Phase III clinical trial program is underway for RTH258, a novel anti-vascular endothelial growth factor (anti-VEGF) agent to treat patients with wet AMD. Patients with wet AMD suffer vision loss when blood vessels grow into the eye and damage the retina. We are also researching early-stage compounds in glaucoma and dry eye, as well as gene therapies for rare and orphan eye diseases.

We continue to study OAP030, also known as Fovista®, and E10030, an anti-platelet-derived growth factor (anti-PDGF) agent from Ophthotech, as a combination treatment with an anti-VEGF agent for wet AMD. A Phase III program to evaluate this combination is underway and initial data is expected in 2016.

Vision care

Alcon is working with Verily, formerly Google Life Sciences, on innovations using its "smart lens" technology to address certain ocular conditions. This "smart lens" technology involves sensors, microchips and other miniaturized electronics embedded within lenses.

The first is a lens to help compensate for the decrease in accommodation of the eye's natural lens in patients with presbyopia who cannot read without glasses. Patient trials are expected to begin in 2016. The "smart lens" has the potential to help restore the eye's natural autofocus on near objects, either in the form of an accommodative contact lens or an IOL as part of refractive cataract treatment.

The second area of focus is on a glucose-sensing lens to help diabetic patients monitor glucose levels via tear fluid in the eye. This work is at pre-proof-of-concept stage.

We are researching early-stage compounds in glaucoma and dry eye, as well as gene therapies for rare and orphan eye diseases

6

Additional biosimilar filings planned by Novartis within the next two years

584 000

People die every year from malaria, a disease for which Novartis is developing new compounds

BIOSIMILARS

Our generics division, Sandoz, is developing biosimilars – protein drugs with essentially the same active ingredient as existing biological drugs that have lost patent protection. Biosimilars represent an innovative and lower-cost way of extending patient access to high-quality medicines for some serious diseases.

Novartis is a leader with three products on the market, including *Zarxio*, which launched in the US during 2015. It is called *Zarzio* outside the US. We also have a strong pipeline with five biosimilars in oncology and immunology in Phase III development or nearing registration. Filings were accepted in the US and EU in November for etanercept, a biosimilar to Enbrel® for several autoimmune diseases, and in the US for pegfilgrastim (Peg G-CSF) for treating neutropenia associated with chemotherapy. Other biosimilars include rituximab for rheumatoid arthritis and follicular lymphoma, a biosimilar to Humira® (adalimumab) for psoriasis, and epoetin alfa for anemia associated with chronic kidney disease. Novartis plans an additional six biosimilar filings within the next two years.

INFECTIOUS DISEASES

There is a pressing need for new drugs to tackle tropical diseases that can be devastating in developing countries, such as malaria; Chagas disease, a tropical disease that can lead to heart failure; and human African trypanosomiasis (HAT), also known as African sleeping sickness, a potentially fatal and difficult-to-treat disease endemic in many sub-Saharan African countries.

Novartis is developing new compounds for malaria, which kills about 584 000 people worldwide every year. We have two potential therapies in Phase II clinical trials, KAE609 (cipargamin) and KAF156. Both act against the two parasites responsible for the majority of malaria deaths, Plasmodium vivax and the more virulent Plasmodium falciparum. Current antimalarials, including *Coartem*, are not effective against Plasmodium vivax. KAE609 and KAF156 are new classes of compounds that treat malaria in different ways from current therapies, and could help combat growing resistance to existing artemisinin-based therapies.

Another challenge to public health is the growing resistance of bacteria to antibiotics. Novartis is working on new antibiotics to treat bacteria that are showing resistance to older antibiotics derived from penicillin as well as to carbapenems, a potent antibiotic class typically used when everything else has failed.

We are also exploring new treatments for viral infections, including respiratory viruses such as influenza and respiratory syncytial virus (RSV), and viruses that threaten patients with undeveloped or compromised immune systems, such as those with HIV/AIDS and those receiving chemotherapy or organ transplants.

PIPELINE

Novartis is consistently rated as having one of the industry's most respected development pipelines, with more than 200 projects in clinical development, as of December 31, 2015.

Many of these projects, which include new molecular entities as well as additional indications and different formulations for marketed products, are for potentially best-in-class or first-in-class medicines that could significantly advance treatment standards for patients worldwide. This table provides an overview of selected projects in confirmatory development.

We use the traditional pipeline model as a platform (e.g., Phase I-III). However, we have tailored the process to be simpler, more flexible and more efficient.

GLOSSARY

Project/product Project refers to the Novartis reference code (combination of three letters and three numbers) used for projects in development. Product refers to the brand name for a marketed product.

Common name Official international non-proprietary name or generic name for an individual molecular entity as designated by the World Health Organization

Glossary continued on page 54

MAJOR DEVELOPMENT PROJECTS

Project/product	Division	Common name	Mechanism of action
ONCOLOGY			
ABL001	Pharmaceuticals	–	BCR-ABL inhibitor
ASB183	Pharmaceuticals	afuresertib	AKT inhibitor
LJM716	Pharmaceuticals	elgemtumab	HER3 mAb[3]
PIM447	Pharmaceuticals	–	Pan-PIM inhibitor
EGF816	Pharmaceuticals	–	Epidermal growth factor receptor inhibitor
BGJ398	Pharmaceuticals	infigratinib	Pan-FGF receptor kinase inhibitor
Tafinlar + Mekinist	Pharmaceuticals	dabrafenib + trametinib	BRAF inhibitor + MEK[4] inhibitor
INC280	Pharmaceuticals	capmatinib	c-MET inhibitor
BKM120	Pharmaceuticals	buparlisib	PI3K[5] inhibitor
BYL719	Pharmaceuticals	alpelisib	PI3Kα[6] inhibitor
Tasigna	Pharmaceuticals	nilotinib	BCR-ABL inhibitor
LCI699	Pharmaceuticals	osilodrostat	Aldosterone synthase inhibitor
LEE011	Pharmaceuticals	ribociclib	CDK4/6[7] inhibitor
PKC412	Pharmaceuticals	midostaurin	Signal transduction inhibitor
Signifor LAR (SOM230)	Pharmaceuticals	pasireotide	Somatostatin analogue
Zykadia (LDK378)	Pharmaceuticals	ceritinib	ALK[9] inhibitor
Votrient	Pharmaceuticals	pazopanib	Angiogenesis inhibitor
Arzerra	Pharmaceuticals	ofatumumab	Anti-CD20 mAb[3]
Afinitor/Votubia (RAD001)	Pharmaceuticals	everolimus	mTOR[10] inhibitor
Promacta/Revolade	Pharmaceuticals	eltrombopag	Thrombopoietin receptor agonist
Jadenu *Exjade* film-coated tablet (FCT)	Pharmaceuticals	deferasirox	Iron chelator
CARDIOVASCULAR AND METABOLISM			
ACZ885	Pharmaceuticals	canakinumab	Anti-interleukin-1ß monoclonal antibody
RLX030	Pharmaceuticals	serelaxin	Recombinant form of human relaxin-2 hormone
Entresto (LCZ696)	Pharmaceuticals	valsartan, sacubitril (as sodium salt complex)	Angiotensin receptor, neprilysin inhibitor

[1] Filings that have received approval in either the US or EU but are awaiting approval in the other market
[2] Phase and planned filing dates refer to lead indication in development.
[3] Monoclonal antibody
[4] Combination of mitogen-activated protein kinase and extracellular signal-regulated kinase
[5] Phosphoinositide 3-kinase inhibitor
[6] Phosphoinositide 3-kinase alpha inhibitor
[7] Cyclin-dependent kinase 4/6
[8] Non-steroidal aromatase inhibitor
[9] Anaplastic lymphoma kinase
[10] Mammalian target of rapamycin
[11] Diffuse large B-cell lymphoma

Potential indication/disease area	Route of administration	Planned filing dates [1,2]	PHASE I	PHASE II	PHASE III	SUBMISSION
Chronic myeloid leukemia	Oral	≥2020	PHASE I			
Solid and hematologic tumors	Oral	≥2020	PHASE I			
Solid tumors	Intravenous infusion	≥2020	PHASE I			
Hematologic tumors	Oral	≥2020	PHASE I			
Solid tumors	Oral	2018		PHASE II		
Solid tumors	Oral	≥2020		PHASE II		
BRAF V600+ NSCLC,[2] BRAF V600+ melanoma (adjuvant), BRAF V600+ colorectal cancer	Oral	2016		PHASE II		
Non-small cell lung cancer	Oral	2018		PHASE II		
Metastatic breast cancer, hormone receptor-positive, aromatase inhibitor resistant/mTOR naïve, 2nd line (+ fulvestrant) [lead indication]; metastatic breast cancer, hormone receptor-positive, aromatase inhibitor and mTOR inhibitor resistant, 3rd line (+ fulvestrant); solid tumors	Oral	2016			PHASE III	
Hormone receptor-positive, HER2-negative advanced breast cancer (postmenopausal women), 2nd line (+ fulvestrant) [lead indication]; solid tumors	Oral	2019			PHASE III	
Chronic myeloid leukemia treatment-free remission	Oral	2016			PHASE III	
Cushing's disease	Oral	2017			PHASE III	
Hormone receptor-positive, HER2-negative advanced breast cancer (postmenopausal women), 1st line (+ letrozole) [lead indication]; hormone receptor-positive, HER2-negative advanced breast cancer (premenopausal women), 1st line (+ tamoxifen + goserelin or NSAI[8] + goserelin); hormone receptor-positive, HER2-negative advanced breast cancer (postmenopausal women), 1st/2nd line (+ fulvestrant); solid tumors	Oral	2016			PHASE III	
Acute myeloid leukemia [lead indication], aggressive systemic mastocytosis	Oral	2016			PHASE III	
Cushing's disease	Long-acting release, intramuscular injection	2016			PHASE III	
ALK[9]+ advanced non-small cell lung cancer (1st line, treatment naïve),[2] ALK[9]+ advanced non-small cell lung cancer (brain metastases)	Oral	2017			PHASE III	
Renal cell carcinoma (adjuvant)	Oral	2016			PHASE III	
Chronic lymphocytic leukemia (extended treatment),[2] chronic lymphocytic leukemia (relapse), non-Hodgkin's lymphoma (refractory)	Intravenous infusion	US registration EU registration				SUBMISSION
Non-functioning GI and lung neuroendocrine tumors,[2] tuberous sclerosis complex seizures, DLBCL[11]	Oral	US registration EU registration				SUBMISSION
Pediatric immune thrombocytopenia	Oral/oral suspension	US approved EU registration				SUBMISSION
Iron overload	Oral FCT	US approved EU registration				SUBMISSION
Secondary prevention of cardiovascular events	Subcutaneous injection	2017			PHASE III	
Acute heart failure	Intravenous infusion	2017			PHASE III	
Chronic heart failure with preserved ejection fraction,[2] post-acute myocardial infarction	Oral	2019			PHASE III	

PIPELINE
continued

Mechanism of action Specific biochemical interaction with a molecular target such as a receptor or enzyme, through which a drug substance produces its pharmacological effect

Potential indication/indications Disease or condition for which a compound or marketed product is in development and is being studied as a potential therapy

Route of administration Path by which a medicinal preparation is administered into the body, such as oral, subcutaneous or intravenous

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 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 also may be used to compare a new drug against a current standard of care to evaluate the overall benefit-risk relationship of the new medicine.

Glossary continued on page 56

MAJOR DEVELOPMENT PROJECTS

Project/product	Division	Common name	Mechanism of action
RESPIRATORY			
QAX576	Pharmaceuticals	–	Anti-interleukin-13 monoclonal antibody
QMF149	Pharmaceuticals	indacaterol, mometasone furoate (in fixed-dose combination)	Long-acting beta2-agonist and inhaled corticosteroid
QAW039	Pharmaceuticals	fevipiprant	CRTH2 antagonist
QVM149	Pharmaceuticals	indacaterol, mometasone furoate, glycopyrronium bromide (in fixed-dose combination)	Long-acting beta2-agonist, long-acting muscarinic antagonist and inhaled corticosteroid
IMMUNOLOGY AND DERMATOLOGY			
CJM112	Pharmaceuticals	–	Anti-interleukin-17 monoclonal antibody
QAW039	Pharmaceuticals	fevipiprant	CRTH2 antagonist
LJN452	Pharmaceuticals	–	FXR agonist
VAY736	Pharmaceuticals	–	Anti-BAFF (B-cell-activating factor) antibody
QGE031	Pharmaceuticals	ligelizumab	High-affinity anti-IgE monoclonal antibody
Ilaris (ACZ885)	Pharmaceuticals	canakinumab	Anti-interleukin-1ß monoclonal antibody
Cosentyx (AIN457)	Pharmaceuticals	secukinumab	Anti-interleukin-17 monoclonal antibody
NEUROSCIENCE			
CAD106	Pharmaceuticals	–	Beta-amyloid-protein therapy
CNP520	Pharmaceuticals	–	BACE inhibitor
EMA401	Pharmaceuticals	–	Angiotensin II receptor antagonist
OMB157	Pharmaceuticals	ofatumumab	Anti-CD-20 monoclonal antibody
BAF312	Pharmaceuticals	siponimod	Sphingosine-1-phosphate receptor modulator
Gilenya	Pharmaceuticals	fingolimod	Sphingosine-1-phosphate receptor modulator
AMG 334	Pharmaceuticals	–	Selective CGRP receptor antagonist
BYM338	Pharmaceuticals	bimagrumab	Inhibitor of activin type II receptor
CELL AND GENE THERAPY			
CTL019	Pharmaceuticals	tisagenlecleucel-T	CD19-targeted chimeric antigen receptor T-cell immunotherapy
FCR001	Pharmaceuticals	–	Inducing stable donor chimerism and immunological tolerance
HSC835	Pharmaceuticals	–	Stem cell regeneration
INFECTIOUS DISEASES			
KAF156	Pharmaceuticals	–	Imidazolopiperazines derivative
KAE609	Pharmaceuticals	cipargamin	PfATP4 inhibitor
EXE844b	Alcon	finafloxacin	Anti-infective

[1] Filings that have received approval in either the US or EU but are awaiting approval in the other market
[2] Phase and planned filing dates refer to lead indication in development.

Potential indication/disease area	Route of administration	Planned filing dates [1,2]	PHASE I	PHASE II	PHASE III	SUBMISSION
Allergic diseases	Subcutaneous injection	≥2020		PHASE II		
Asthma	Inhalation	2018			PHASE III	
Asthma	Oral	2019			PHASE III	
Asthma	Inhalation	2018			PHASE III	
Immune disorders	Subcutaneous injection	≥2020		PHASE II		
Atopic dermatitis	Oral	≥2020		PHASE II		
Non-alcoholic steatohepatitis	Oral	≥2020		PHASE II		
Primary Sjoegren's syndrome	Subcutaneous injection	≥2020		PHASE II		
Chronic spontaneous urticaria/ inducible urticaria	Subcutaneous injection	≥2020		PHASE II		
Hereditary periodic fevers	Subcutaneous injection	2016			PHASE III	
Ankylosing spondylitis,[2] psoriatic arthritis,[2] non-radiographic axial spondyloarthritis	Subcutaneous injection	US registration EU approved				SUBMISSION
Alzheimer's disease	Intramuscular injection	≥2020		PHASE II		
Alzheimer's disease	Oral	≥2020		PHASE II		
Neuropathic pain	Oral	≥2020		PHASE II		
Relapsing multiple sclerosis	Subcutaneous injection	2019		PHASE II		
Secondary progressive multiple sclerosis	Oral	2019			PHASE III	
Chronic inflammatory demyelinating polyradiculoneuropathy	Oral	2017			PHASE III	
Migraine	Subcutaneous injection				PHASE III	
Sporadic inclusion body myositis [lead indication], hip fracture, sarcopenia	Intravenous infusion	2016			PHASE III	
Pediatric acute lymphoblastic leukemia [lead indication], diffuse large B-cell lymphoma	Intravenous infusion	2016		PHASE II		
Renal transplant	Intravenous infusion	≥2020		PHASE II		
Stem cell transplantation	Intravenous infusion	≥2020		PHASE II		
Malaria	Oral	2019		PHASE II		
Malaria	Oral	≥2020		PHASE II		
Otitis media-tympanostomy tube surgery	Topical	2016 US			PHASE III	

PIPELINE
continued

Advanced development Medical device project for which a positive proof of concept has been established and studies are being conducted to establish the safety, efficacy or performance to address regulatory requirements for obtaining marketing authorization

Submission An application for marketing approval has already been submitted to one or both of the following regulatory agencies: the US Food and Drug Administration (FDA), the European Medicines Agency (EMA). Novartis has not yet received marketing authorization from both regulatory agencies. The application contains comprehensive data and information gathered during human clinical trials and animal studies conducted through the various phases of drug development.

MAJOR DEVELOPMENT PROJECTS

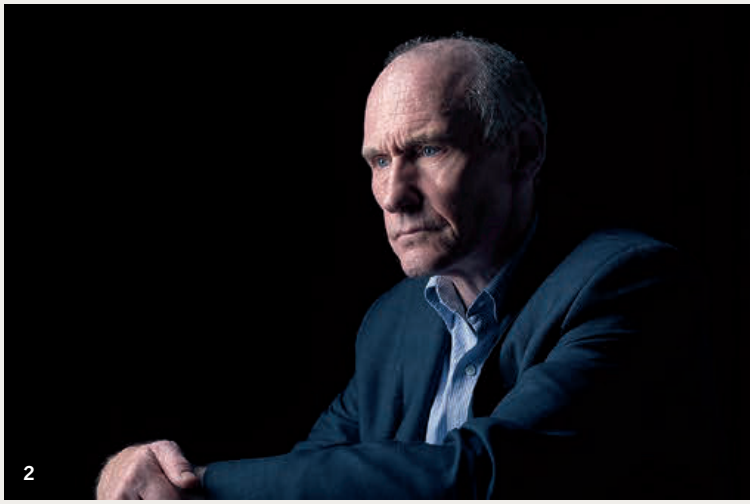
Project/product	Division	Common name	Mechanism of action
OPHTHALMOLOGY			
Lucentis	Pharmaceuticals	ranibizumab	Anti-vascular endothelial growth factor (VEGF) monoclonal antibody fragment
OAP030 (Fovista®)	Pharmaceuticals	pegpleranib	Aptamer anti-platelet-derived growth factor
Jetrea ready-diluted injection	Alcon	ocriplasmin	Alpha-2 antiplasmin reducer
RTH258	Alcon	brolucizumab	Anti-VEGF single-chain antibody fragment
Ilevro ophthalmic suspension	Alcon	nepafenac (0.3%)	Anti-inflammatory
AcrySof IQ ReSTOR Toric 2.5 D IOL	Alcon	–	Multifocal, aspheric and cylinder-correcting intraocular lens
AOSept Plus/ *Clear Care* Plus with *HydraGlyde*	Alcon	–	Disinfection and cleaning
AcrySof IQ Aspheric IOL with *UltraSert*	Alcon	–	Pre-loaded intraocular lens delivery device
AcrySof IQ ReSTOR Toric 3.0 D IOL	Alcon	–	Multifocal, aspheric and cylinder-correcting intraocular lens
BIOSIMILARS			
GP2013	Sandoz	rituximab	Anti-CD20 antibody
GP2017	Sandoz	adalimumab	TNF-α inhibitor
HX575	Sandoz	epoetin alfa	Erythropoiesis-stimulating agent
HX575 s.c.	Sandoz	epoetin alfa	Erythropoiesis-stimulating agent
GP2015	Sandoz	etanercept	TNF-α inhibitor
LA-EP2006	Sandoz	pegfilgrastim	Pegylated granulocyte colony-stimulating factor

[1] Filings that have received approval in either the US or EU but are awaiting approval in the other market
[2] Phase and planned filing dates refer to lead indication in development.
[12] Choroidal neovascularization secondary to conditions other than age-related macular degeneration and pathologic myopia

Potential indication/disease area	Route of administration	Planned filing dates [1,2]	PHASE I	PHASE II	PHASE III	SUBMISSION
Choroidal neovascularization,[12] retinopathy of prematurity	Intravitreal injection	2016			PHASE III	
Neovascular age-related macular degeneration	Intravitreal injection	2017			PHASE III	
Vitreomacular traction	Intravitreal injection	2017 Japan			PHASE III	
Wet age-related macular degeneration	Intravitreal injection	≥2018			PHASE III	
Postsurgical macular edema in patients with diabetes	Topical	Submitted EU 2018 US			PHASE III	
Cataractous lens replacement with or without presbyopia, and with astigmatism	Surgical	2016 US	ADVANCED DEVELOPMENT			
Contact lens care	Lens care	2017 Japan	ADVANCED DEVELOPMENT			
Cataractous lens replacement	Surgical	Submitted Japan	ADVANCED DEVELOPMENT			SUBMISSION
Cataractous lens replacement with or without presbyopia, and with astigmatism	Surgical	Submitted US	ADVANCED DEVELOPMENT			SUBMISSION
Non-Hodgkin's lymphoma, chronic lymphocytic leukemia, rheumatoid arthritis, granulomatosis with polyangiitis (also known as Wegener's granulomatosis), and microscopic polyangiitis and others (same as originator)	Intravenous				PHASE III	
Arthritides (rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis), plaque psoriasis and others (same as originator)	Subcutaneous				PHASE III	
Anemia in chronic kidney disease, chemotherapy-induced anemia and others (same as originator)	Subcutaneous and intravenous	US			PHASE III	
Anemia in chronic kidney disease	Subcutaneous	Submitted EU (extension nephrology, appproved as *Binocrit* since 2007)				SUBMISSION
Arthritides (rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis), plaque psoriasis and others (same as originator)	Subcutaneous	Submitted US Submitted EU				SUBMISSION
Chemotherapy-induced neutropenia and others (same as originator)	Subcutaneous	Submitted US				SUBMISSION

1

Although results so far are promising, important questions remain, such as managing a potentially serious side effect called cytokine release syndrome, ensuring the safety of the procedure and understanding why some patients relapse



2

1 Researchers at the Novartis facility in Morris Plains check on the production process for human T-cells.
2 Dr. Carl June of the University of Pennsylvania developed gene transfer therapy to prime the body's own immune cells to fight cancer.
3 A technician prepares a container with liquid nitrogen to transport human cells from one part of the facility in Morris Plains to another.
4 CART patient Doug Olson enjoys sailing with his grandchildren.

→ CONTINUED FROM PAGE 43

Dr. Carl June, director of translational research at the University of Pennsylvania's Abramson Cancer Center, is a pioneer in developing CART therapy. His research into gene therapy as a possible treatment for cancer began more than 20 years ago when he was a scientist in the US Navy, studying potential HIV therapies. Dr. June encountered patients who appeared to have benefited from treatment with genetically re-engineered T-cells, and he believed the same approach might work in cancer.

In 1999, Dr. June joined the University of Pennsylvania, where he and his team began working to develop the first CART therapy for patients with cancer. It took a further decade of study and work to overcome the challenge of producing sufficient quantities of re-engineered T-cells before the therapy was ready for trial and the first small group of leukemia patients could receive the treatment.

CART is a radical break from existing cancer therapies, as 69-year-old retiree Doug Olson can attest. Diagnosed at 49 with chronic lymphocytic leukemia, Mr. Olson endured four unsuccessful rounds of chemotherapy until 2010 when, after 14 years of treatment, he became an early patient in Dr. June's CART trials at the University of Pennsylvania.

Mr. Olson continues to lead a full life. He is an avid runner and enjoys sailing with his grandchildren.

The first CART treatment being developed by Novartis and the University of Pennsylvania is CTL019, a potential therapy for children with acute lymphoblastic leukemia (ALL) for whom all other treatments ultimately failed. In a Phase II clinical trial of pediatric patients, 93% had no detectable cancer after 28 days. Although results so far are promising, important questions remain for Dr. June and Novartis, such as managing a potentially serious side effect called cytokine release syndrome, ensuring the safety of the treatment and understanding why some patients relapse.

To expand trials of CART therapy to more patients, in 2015 Novartis began operating a facility in the US state of New Jersey to process much larger numbers of patients' T-cells. The process of modifying patients' immune cells is complex, and scaling up the manufacturing of modified T-cells remains a challenge.

Inside the facility, logistics experts track the production process on large computer screens, displaying the many steps required for each patient's T-cells to be re-engineered. First, the T-cells are removed from a cancer patient's blood sample. Technicians then use deactivated viruses to insert genes into the T-cells, enabling them to grow a cancer-hunting receptor. These modified cells are multiplied until there are enough of them for the therapy. Then the cells are prepared for shipment and transported back to the patient's medical center, where clinicians infuse the reprogrammed cells.

Meanwhile, Dr. June and Novartis are also exploring whether CART technology can be effective in treating other, more common cancers.

CORPORATE RESPONSIBILITY

CONTENTS

PHOTO ESSAY

A life dedicated to fighting malaria

About three-quarters of the Kenyan population is at risk for malaria, and all four species of the malaria parasite that infect humans occur in the country. Although there has been substantial progress, malaria remains the leading cause of mortality in Kenya, killing an estimated 30 000 people every year, most of them children under 5 years old.

→ CONTINUED ON PAGE 72

CORPORATE RESPONSIBILITY

We focus our corporate responsibility work in two key areas: expanding access to healthcare and doing business responsibly. We work to develop innovative products for underserved patients, pioneer new social business approaches in low- and middle-income communities, drive environmental sustainability and operate to high ethical standards.

Through our core business – the discovery, development and marketing of innovative treatments – Novartis has helped prevent and treat diseases, ease suffering and improve quality of life for people worldwide. At the same time, we have been working to get these treatments to more of the people who need them. Our generics division, Sandoz, helps make affordable, high-quality medicines available to more people. We also have an extensive access-to-medicine program that includes drug donations, selling at cost, social business initiatives and patient assistance programs. The United Nations' recently launched Sustainable Development Goals aim to ensure healthy lives for all. We believe we can play a key role by finding new and innovative ways to drive access to our medicines, particularly in developing countries.

MANAGING CORPORATE RESPONSIBILITY

Recent changes in the governance of corporate responsibility (CR) at Novartis started to have a clearly discernible impact in 2015. The involvement of the Governance, Nomination and Corporate Responsibilities Committee of the Novartis Board of Directors and a dedicated Access to Medicine Committee helped facilitate the launch of Novartis Access – a new, industry-first portfolio of medicines to combat noncommunicable diseases (NCDs). The program was approved by the Executive Committee of Novartis (ECN), which also endorsed our latest set of integrity and compliance initiatives, as well as our new environmental sustainability vision and targets.

INNOVATION IN ACCESS

The challenge of NCDs such as cardiovascular diseases, diabetes and cancer in the developing world is increasing. These conditions disproportionately affect poverty-stricken areas. Already today, 28 million people die each year from these types of diseases in low- and middle-income countries – representing nearly 75% of deaths from NCDs globally. Faced with the existing challenge of managing infectious diseases, these countries are now confronted by a double disease burden. Because chronic illnesses require early detection and long-term, ongoing treatment, society needs new ways to ensure access to medicines to treat these diseases in countries where people often have limited access to healthcare.

75%

of deaths from chronic diseases are in low- and middle-income countries and the Novartis Access program aims to help countries respond

Teaching children about malaria is a key part of fighting the disease in Kenya. Agnes Akoth regularly visits schools to talk to pupils and help them better understand how to minimize the risks they face.

Novartis Access is a first in the industry, offering countries a portfolio of medicines for chronic diseases at a price of USD 1 per treatment per month

Against this background, in 2015 we launched Novartis Access. The program focuses on affordability and availability of 15 on- and off-patent medicines addressing four key NCDs: cardiovascular diseases, diabetes, respiratory illnesses and breast cancer. A first in the industry, the portfolio is offered as a basket to governments and other public-sector healthcare providers at a price of USD 1 per treatment per month. We are also actively seeking partners to strengthen local healthcare system capabilities in NCDs, as these partnerships will be essential to the success of the program.

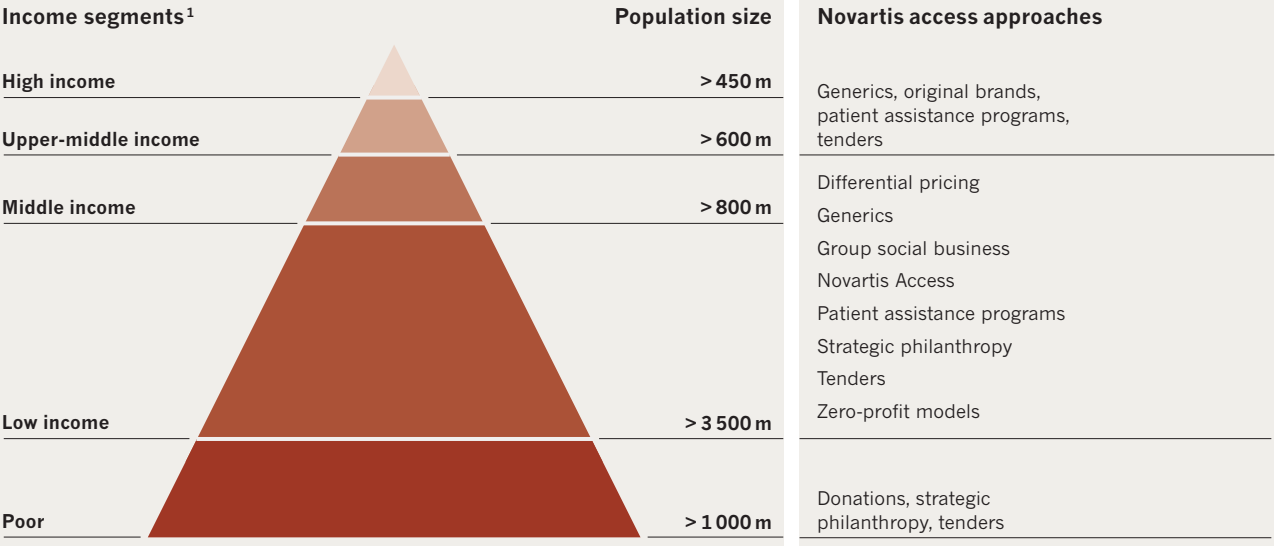
Novartis Access has been set up to be commercially sustainable over the long term, enabling continuous support for patients in these regions. The governments, non-governmental organizations (NGOs) and other stakeholders we consulted during the planning phase underlined the importance of a long-term perspective to fight chronic diseases; they stressed that donations are important but not sustainable enough to make a significant impact.

Combining innovative, patented medicines and high-quality generics

Novartis is in a unique position in the industry to establish a program that can have a lasting impact on patients. Our Sandoz Division is the world's second-largest maker of more affordable generic medicines, and we have a long history of providing access to our innovative patented medicines. Novartis Access builds on our existing efforts to get medicines to patients who need them most, especially the poor and very poor. Lessons from our successful Malaria Initiative and Healthy Family social business programs were critical to helping us build the foundations of Novartis Access.

The initial portfolio includes products from Novartis Pharmaceuticals and Sandoz. These medicines have been selected from the Novartis Group portfolio based on three criteria: significant health need, medical relevance and lack of local access programs. The portfolio includes Novartis Pharmaceuticals products valsartan (hypertension), vildagliptin (diabetes), and letrozole (breast cancer), as well as high-quality generic medicines from Sandoz to treat heart failure and hypertension (amlodipine, bisoprolol,

NOVARTIS ACCESS STRATEGY



[1] PEW Research Center with data from World Bank PovcalNet (data 2011)

CORPORATE RESPONSIBILITY
continued

HCT, furosemide, ramipril), dyslipidemia (simvastatin), diabetes (glimepiride, metformin), breast cancer (anastrozole, tamoxifen), asthma and chronic obstructive pulmonary disease (salbutamol), and childhood pneumonia (amoxicillin).

Expansion

Novartis Access is first targeting Kenya, Ethiopia and Vietnam. We have already signed agreements in Kenya and Ethiopia, and the first product orders have been received. These countries were chosen because of their diverse access challenges, Novartis presence, existing healthcare infrastructure, and/or substantial partnerships with NGOs. Beyond the medicines, we are also actively seeking partners to raise awareness of key NCDs; distribute medicines and ensure the integrity of the supply chain; and strengthen healthcare system capabilities in NCDs, including training on diagnosis and treatment.

Our initial plan is to roll out Novartis Access in 30 countries in the coming years – depending on government and stakeholder demand. We expect the insights we gather on the ground to guide our expansion. We also reached an agreement with Boston University in the US to help us measure the public health impact of Novartis Access.

We know that we will not solve the access challenge with this program alone, but we believe it can make a significant contribution to improving the lives of patients in low- and lower-middle-income countries, and reduce the impact of NCDs.

EXPANDING ACCESS TO MEDICINES

Beyond Novartis Access, in 2015 we continued to pursue a combination of approaches – philanthropy, zero-profit initiatives and social ventures – to expand access to our medicines.

Higher dose of antimalarial medicine

In July, a higher dose of our artemisinin-based combination therapy *Coartem* for the treatment of malaria received World Health Organization (WHO) prequalification, which uses stringent criteria to ensure quality, safety and efficacy of medicines for HIV/AIDS, malaria and tuberculosis. Many countries and NGOs buy medicines in bulk that have WHO prequalification.

30

Countries are targeted for the rollout of Novartis Access in the coming years

A malaria surveillance team from the Walter Reed Project visits a home near the Kombewa clinic to check on children at risk from the disease. The team tests for malaria and administers medicine where appropriate.

Access-to-healthcare key performance indicators 2015

RESEARCH AND DEVELOPMENT

	FTEs[1]	Value USD (millions)[2]
Novartis Institute for Tropical Diseases	100	17
Novartis Institutes for BioMedical Research neglected disease programs	24	5
Pharmaceuticals development on malaria, tuberculosis and neglected diseases	60	20
Total	**184**	**42**

PATIENT ASSISTANCE

	Patients reached (thousands)	Value USD (millions)[3]
Novartis Patient Assistance Foundation Inc.	43	707
Glivec patient assistance	62	1 251
Tasigna patient assistance	8	230
Exjade patient assistance	11	43
Alcon medical missions[4]	394	43
Alcon US patient assistance	8	13
Malaria/*Coartem*	64 098	112
Leprosy (WHO)	305	6
Fascioliasis/*Egaten*[5]	14	<1
Emergency relief (medicine donations)		1
Total	**64 943**	**2 406**

HEALTH SYSTEMS STRENGTHENING

	FTEs[1]	People reached (thousands)[6]	Patients reached (thousands)	Value USD (millions)[2]
Novartis Foundation	10	4 456[7]		13
Novartis research capacity-building programs	6	1		6
Social business: Healthy Family in India, Kenya, Vietnam and Indonesia[8]	519	7 621	981	
Total	**535**	**12 078**	**981**	**19**

Grand total	**719**	**12 078**	**65 924**	**2 467**

[1] Full-time equivalent positions and contractors
[2] Operating costs
[3] Wholesale acquisition cost plus logistics costs for some programs
[4] Retail value for surgical products
[5] Manufacturing, testing and FTE costs
[6] Via training and service delivery
[7] Includes potential catchment of population in certain districts in Tanzania
[8] People reached through health awareness activities

CORPORATE RESPONSIBILITY
continued

With this higher dose, a malaria patient can take just six tablets – versus the previous 24 – to complete a full course of treatment. The hope is that this reduction will help improve clinical effectiveness and adherence to treatment.

Improving maternal and child health in Africa

In Ethiopia, the second most populous country in Africa, most women give birth in their homes – and if a problem arises during pregnancy or birth, local health centers are the first point of contact. Unfortunately, many health centers lack necessary medical supplies, and healthcare workers often do not have the medical expertise needed to help women with pregnancy complications.

In March, as part of our work to strengthen health systems, Sandoz launched a new program in Ethiopia called New Life & New Hope to improve maternal and child health and to reduce mortality associated with childbirth. They sponsored four Basic Emergency Obstetric and Newborn Care trainings for 80 midwives, impacting the care of approximately 40 000 pregnant women in the Addis Ababa area. Sandoz began expanding the trainings to 120 more midwives in 2015 and will continue to do so in the first quarter of 2016.

Stopping leprosy transmission

The Novartis Foundation continued to implement a strategy adopted in 2014 that aims to stop the transmission of leprosy. A key element of this strategy is leprosy post-exposure prophylaxis (LPEP), which is designed to decrease the risk of developing leprosy and reduce further transmission of the mycobacteria causing the disease.

Through this project, implemented in collaboration with International Federation of Anti-Leprosy Associations partners, the families, friends and others who have been in contact with newly diagnosed patients are examined and treated if they also have leprosy, or receive preventative therapy if they have no symptoms. This could decrease the risk of them developing leprosy in the years following contact by as much as 50–60%. LPEP was launched in 2015 in India, Indonesia, Myanmar, Nepal, Tanzania and Sri Lanka.

40 000

The approximate number of pregnant women in the Addis Ababa area who benefited from a Sandoz program to improve maternal and child health

A mother rests with her child under insecticide-treated mosquito netting, a major weapon in the fight against malaria. The insecticides repel mosquitoes and studies show they are highly effective in reducing the incidence of malaria.

We launched a series of comprehensive, multiyear initiatives that aim to sharpen our culture of ethics

New model to combat hypertension in Ghana
The Novartis Foundation also worked with partners to launch an innovative model for screening and managing hypertension in an urban district in Ghana. The intervention seeks to improve the control of hypertension by making services more accessible in the community, while empowering individuals to control their own blood pressure. Screening began in 2015.

DOING BUSINESS RESPONSIBLY

We recognize that achieving our business goals requires that we operate with high integrity, transparency and environmental sustainability.

Building a culture of integrity

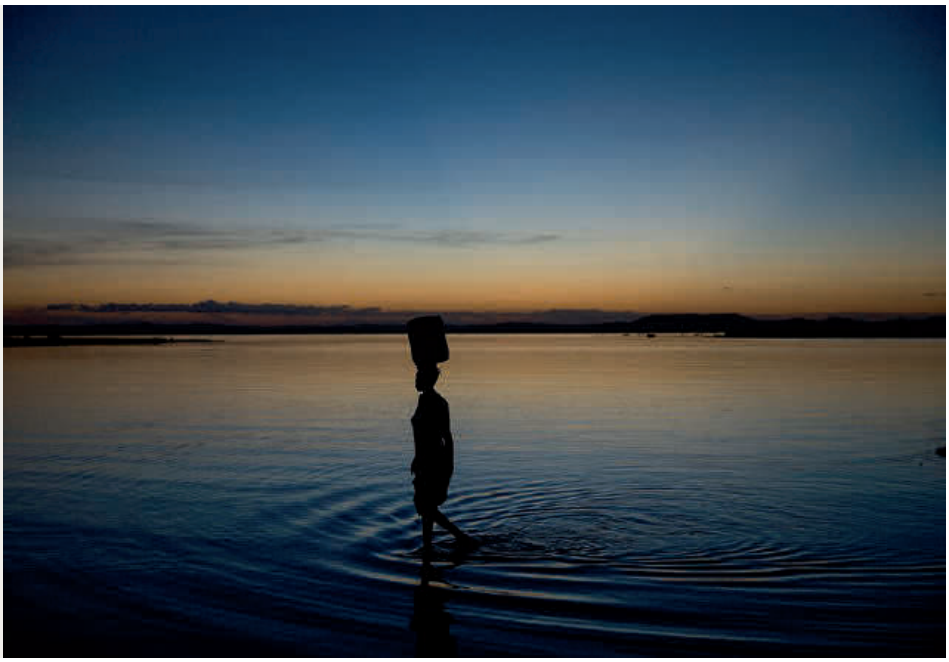
In 2015, we continued taking concrete steps to reinforce our culture of integrity, even as we dealt with several ethical issues.

Society has increasingly high expectations for ethical behavior from global healthcare companies – expectations that very often go beyond what is legally required. We are taking steps to ensure our standards align with these expectations.

To further reinforce our culture of ethics, in 2015 we launched a series of comprehensive, multiyear initiatives in line with our six core values of innovation, quality, collaboration, performance, courage and integrity. We are working to adjust promotional practices with doctors and other healthcare professionals, and to be more transparent about our financial relationships with them. And we are reviewing traditional practices, such as sending healthcare professionals to international congresses and engaging them to speak at professional gatherings, to determine if they should be modified or stopped.

At the same time, we are pursuing new ways to interact with healthcare professionals. In 2015, we began developing tools to facilitate medical education for our customers. They include a mix of virtual and local meetings to bring the experience of international congresses to the local level, a platform to connect online communities in disease areas related to Novartis products, and new digital tools that supplement face-to-face meetings with our medical science liaisons. These tools will be rolled out to sales forces worldwide in 2016.

A woman fetches water by the shores of Lake Victoria, Africa's largest lake, in Kenya. The lake is a fertile breeding ground for mosquitoes, putting local people at great risk of contracting malaria.



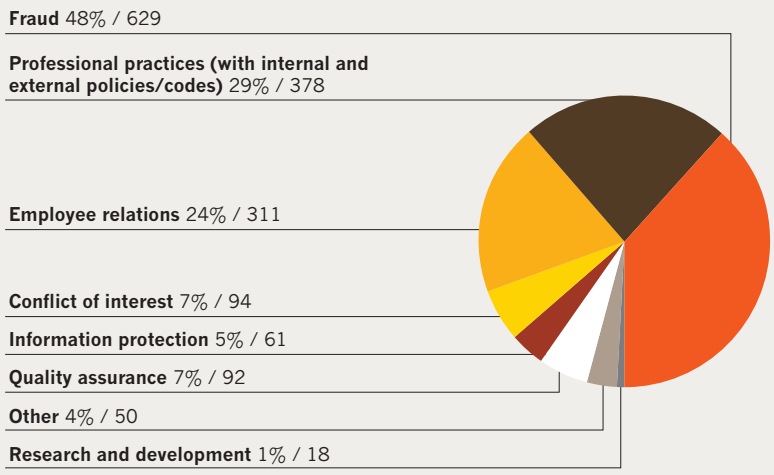
CORPORATE RESPONSIBILITY
continued

ETHICS AND PEOPLE KEY PERFORMANCE INDICATORS[1]

	2015	2014
Full-time equivalent positions / headcount[2]	**118 700 / 122 966**	117 809 / 122 113
Turnover: % voluntary / % overall	**7.3 / 13.5**	7.0 / 13.0
Voluntary turnover of superior performers (%)	**5.5**	5.1
Internal hires / external hires (%)	**44.8 / 55.2**	44.4 / 55.6
Women in management: % of management[3] / % of Board of Directors	**41 / 27**	40 / 18
Associate nationalities / associate nationalities in management[3]	**144 / 109**	147 / 109
Annual training hours per employee	**27.3**	27.0
Lost-time injury and illness rate (per 200 000 hours worked)[4]	**0.11**	0.12
Total recordable case rate (per 200 000 hours worked)[4, 5]	**0.40**	0.43
Novartis associates trained and certified on Code of Conduct[6]	**110 638**	108 290
Misconduct cases reported / allegations substantiated[7]	**1 299 / 755**	1 547 / 1 131
Dismissals and resignations related to misconduct	**343**	620
Regulatory inspections without major findings (%)	**98.4**	97.9
Suppliers posing an elevated risk under responsible procurement[8]	**475**	428
Suppliers with active follow-up[8, 9]	**249**	222
Suppliers audited[8]	**100**	78

[1] Continuing operations
[2] Headcount reflects the total number of associates in our payroll systems. Full-time equivalent adjusts headcount for associates working less than 100%. All data as of December 31
[3] Management defined locally
[4] Data include Novartis associates and third-party personnel managed by Novartis associates
[5] Includes all work-related injury and illness, whether leading to lost time or not
[6] Active Novartis associates with email addresses, trained via e-learning, including associates who left during the year
[7] Reporting has changed from assessing cases to assessing allegations. Because one case can have more than one allegation, the assessment per allegation is higher than the previously reported assessment per case. Furthermore, numbers are based on the date a misconduct case is reported, whereas previously they were based on the date a misconduct case was assigned for investigation. 2014 data have been restated following the new methodology.
[8] Includes new suppliers and new products, services or sites from existing suppliers; figures include data on labor rights, HSE and animal welfare
[9] Follow-up includes more information requested, audits or on-site assessments.

BPO ALLEGATIONS PER CATEGORY[1]



[1] Continuing operations
One case can fall under several categories, so the total is greater than 100% and category figures total more than the stated number of cases. Investigation reports are received on an ongoing basis, which potentially leads to a reassessment of the allegation category and related figures.

FURTHER DETAIL
On managing misconduct cases:
www.novartis.com/ethics-compliance

While net sales of Novartis products have more than doubled in 15 years, GHG emissions have been reduced by 20.5% since 2008

We are also adjusting incentives for our sales teams around the world. For instance, we have started to increase the weight of fixed pay in overall compensation and to reduce the variable component. Additionally, we are evaluating whether people's behavior aligns with Novartis Values and Behaviors as one element used to set variable pay.

In 2015, we also continued to manage several integrity issues with root causes that sometimes go back many years. In November, Novartis Pharmaceuticals Corporation (NPC) settled litigation in the Southern District of New York related to interactions with specialty pharmacies from 2004 to 2013. The settlement included payments totaling USD 390 million plus additional legal expenses to plaintiffs, and an agreement to amend and extend for five years an existing corporate integrity agreement with the Office of the Inspector General of the US Department of Health and Human Services.

In Japan, we had setbacks in our efforts to address and improve ethics and compliance at Novartis Pharma K.K. (NPKK), our Japanese subsidiary. The company received a business suspension order, as well as a business improvement order and instruction from the Japanese health authorities in 2015 for failures to promptly report cases where patients experienced adverse effects while taking our medicines. NPKK has taken steps to correct the issue and prevent recurrence.

Although we may never be able to entirely prevent individual misconduct, the actions Novartis is now taking will further support efforts to avoid systemic issues.

Transparency in reporting

We believe that openly communicating payments, fees or honoraria provided to healthcare professionals or healthcare organizations such as hospitals helps foster trust and reinforces our commitment to high ethical business standards.

In Europe, Novartis applies the European Federation of Pharmaceutical Industries and Associations (EFPIA) Code. This industry-wide code requires EFPIA member companies, including Novartis Pharma AG, to disclose any transfers of value to healthcare professionals and healthcare organizations, and publish them on the internet as of 2016. Novartis has committed to go beyond the EFPIA Code and establish a single, consistent standard for disclosing this information for all divisions, countries and product segments in Europe by 2018.

A new vision for the environment

Our aim is to be a leader in health, safety and environmental protection. Since we launched our last set of environmental targets, our structured approach to minimizing our environmental impact has helped us make considerable progress: while Group sales have more than doubled in 15 years, our consumption of energy and water has increased at a much slower pace and greenhouse gas (GHG) emissions have been reduced by 20.5% since 2008.

To continue building on our success, we adopted a new set of mid- to long-term targets as part of an environmental sustainability plan approved in June by the ECN. Our efforts are focused in four strategic environmental impact areas: energy and climate, water and micropollutants, materials and waste, and environmental sustainability management.

CORPORATE RESPONSIBILITY
continued

Our targets for 2020 are ambitious. We commit to cutting our GHG emissions (Scope 1 and 2) by 30% compared to 2010. We aim to significantly reduce water consumption and create no adverse effects on water due to waste from our sites. We also commit to reducing our company's non-recyclable waste created through our operations by 30% compared to 2010.

Throughout 2015, we continued to take practical strides toward achieving these goals. For example, at our Sandoz site in Kundl, Austria, a team found a low-energy way to separate a final product from a reaction mixture by using a new membrane filtration process that operates at a lower temperature and requires less water. This reduced natural gas use for this process by 14% per year and cut GHG emissions by 680 tons – the equivalent of 500 average cars each driving 10 000 kilometers per year.

To further reinforce our environmental protection activities, the ECN in June also approved our first-ever internal carbon price, set at USD 100 per ton of carbon dioxide emitted. Existing pricing schemes by companies and governments vary from USD 1 to USD 168 per ton of carbon dioxide, but we wanted to set a price high enough to reflect the actual cost of carbon emissions to society. By explicitly assuming the cost of CO_2 we emit, we expect to make better investment decisions that incorporate the benefits of greater energy efficiency.

30%

Our commitment to cut GHG emissions by 2020, vs. 2010, as part of our updated environmental targets

FURTHER DETAIL

Corporate responsibility:
www.novartis.com/corporate-responsibility

Detailed targets and results for 2015, and targets for 2016:
www.novartis.com/cr-targets

CR materiality:
www.novartis.com/cr-materiality

CR Performance Report:
www.novartis.com/cr-performance

ENVIRONMENTAL SUSTAINABILITY KEY PERFORMANCE INDICATORS [1]

	2015	2014
Energy use (million gigajoules), on site and purchased	**17.1**	17.0
Water discharge (million m^3)	**16.6**	17.0
Contact water use, excluding cooling water (million m^3)	**15.4**	15.3
Emissions		
Greenhouse gas (GHG) emissions, total Scope 1 and Scope 2 (1 000 t)	**1 350.7**	1 361.9
GHG emissions, Scope 1, combustion and processes on site (1 000 t)	**388.5**	395.0
GHG emissions, Scope 1, vehicles (1 000 t)	**142.3**	148.3
GHG emissions, Scope 2, purchased energy (1 000 t)	**819.9**	818.6
Halogenated volatile organic compounds (t)	**63.0**	86.0
Non-halogenated volatile organic compounds (t)	**524.6**	634.6
Operational waste		
Hazardous waste not recycled (1 000 t)	**56.3**	60.2
Non-hazardous waste not recycled (1 000 t)	**20.5**	21.2

[1] Continuing operations
For more detail on environmental sustainability, see www.novartis.com/about-us/corporate-responsibility/environmental-sustainability.

Independent Assurance Report on the Novartis 2015 Corporate Responsibility Reporting

TO THE BOARD OF DIRECTORS OF NOVARTIS AG, BASEL

INDEPENDENT ASSURANCE REPORT ON THE NOVARTIS CORPORATE RESPONSIBILITY REPORTING

We have been engaged to perform assurance procedures to provide limited assurance on the following aspects of the 2015 corporate responsibility (CR) reporting of Novartis AG and its consolidated subsidiaries (Novartis Group) included in the Annual Report 2015.

SCOPE AND SUBJECT MATTER

Our limited assurance engagement focused on the following data and information disclosed in the consolidated CR reporting of Novartis Group for the year ended December 31, 2015:

- The social key performance indicators on page 7, the "Access-to-Healthcare Key Performance Indicators 2015" on page 65, the "Ethics and People Key Performance Indicators" on page 68, the "BPO Allegations Per Category" on page 68, and the "Environmental Sustainability Key Performance Indicators" on page 70 (CR indicators)
- Reporting processes and related controls in relation to data aggregation of CR indicators

CRITERIA

The management reporting processes with respect to the CR reporting and CR indicators were assessed against Novartis Group internal policies and procedures, as set forth in the following:

- Guideline on Corporate Responsibility Management at Novartis and the Code of Conduct
- Procedures by which the data for the CR indicators reporting are gathered, collected and aggregated internally

The accuracy and completeness of CR indicators are subject to inherent limitations given their nature and methods for determining, calculating and estimating such data. Our Assurance Report should therefore be read in connection with Novartis Group guidelines, definitions and procedures on CR reporting.

RESPONSIBILITIES AND METHODOLOGY

The Board of Directors of Novartis AG is responsible for both the subject matter and the criteria as well as for selection, preparation and presentation of the information in accordance with the criteria. Our responsibility is to form an independent opinion, based on our limited assurance procedures, on whether anything has come to our attention to indicate that the CR indicators are not stated, in all material respects, in accordance with the reporting criteria.

We planned and performed our procedures in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (revised) "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information." This standard requires that we plan and perform the assurance engagement to obtain limited assurance on the identified CR indicators.

A limited assurance engagement under ISAE 3000 (revised) is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks. Consequently, the nature, timing and extent of procedures for gathering sufficient appropriate evidence are deliberately limited relative to a reasonable assurance engagement and, therefore, less assurance is obtained with a limited assurance engagement than for a reasonable assurance engagement.

OUR INDEPENDENCE AND QUALITY CONTROL

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior.

Our firm applies International Standard on Quality Control 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

SUMMARY OF WORK PERFORMED

Our assurance procedures included the following:

- Reviewing the application of the Novartis Group internal CR reporting guidelines
- Interviewing associates responsible for internal reporting and data collection at Group, divisional and local levels
- Performing tests on a sample basis of evidence supporting selected CR data concerning completeness, accuracy, adequacy and consistency
- Inspecting relevant documentation on a sample basis
- Reviewing and assessing the management reporting processes for CR reporting and consolidation, and their related controls

We have not carried out any work on data other than outlined in the scope and subject matter section as defined above. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our assurance conclusions.

LIMITED ASSURANCE CONCLUSION

Based on our work described in this report, nothing has come to our attention that causes us to believe that the data and information outlined in the scope and subject matter section (including the related controls) have not been prepared, in all material aspects, in accordance with Novartis Group internal policies and procedures.

PricewaterhouseCoopers AG

pwc

Bruno Rossi **Raphael Rutishauser**

Basel, January 26, 2016

CONTINUED FROM PAGE 61

Lake Victoria in southwestern Kenya is on the front line in the fight against malaria, and Agnes Akoth is a key figure. Tall and striking, this towering force of energy in Kisumu County is a 35-year veteran of the global quest to eradicate a deadly disease.

Despite job offers from big hospitals in the capital Nairobi, Ms. Akoth has chosen to stay in Kisumu and works as head nurse at the US Army Medical Research Unit-Kombewa clinic, known locally as the Walter Reed Project. Here she provides much-needed local leadership and addresses poor understanding of malaria in surrounding communities. Her own experience of contracting the disease while pregnant with her youngest child has made her resolute about what must be done.

The Walter Reed Project has a two-pronged approach to fighting the disease. Scientists there conduct research and run clinical trials that may potentially lead to new malaria vaccines and drugs. Novartis works with the project and runs clinical trials for new antimalarial medicines there, including two key studies for its artemisinin-based therapy *Coartem*.

The project also has a strong emphasis on prevention and diagnosis. Teams of community health workers stride out of the center every day, laden with diagnostic kits, antimalarial medicines and other treatments, heading for local villages. They collect blood samples from residents, perform malaria tests, administer drugs, and advise people on how to protect themselves from the disease.

Education is a top priority to counter misconceptions about malaria. Ms. Akoth talks about her own experience with the disease and how she has watched it kill young children, strike down men of working age, and rob families of economic independence.

Ms. Akoth and colleagues give away insecticide-treated mosquito nets to pregnant women at maternity clinics, one of several practical measures used to combat the disease.

But fighting malaria in this part of Kenya is a constant challenge. Bad weather, poor-quality roads, and a lack of knowledge among locals about how malaria spreads all combine to make life difficult for healthcare workers.

Despite their best efforts, they do not always get a warm welcome. Some residents resent the intrusion, while others counter the advice they receive with their own views about how malaria is caused.

Ms. Akoth believes the key to tackling malaria, especially among children, is to expand proven interventions until they reach every child who needs them. It's a huge task, but lives are being saved and death rates are falling. That's her motivation to carry on.

Novartis works with the Walter Reed Project and runs clinical trials for new antimalarial medicines there, including two key studies for its artemisinin-based therapy Coartem

1 Agnes Akoth, head nurse at the Kombewa clinic
2 Malaria specialists examine a young child in the Nyanza District of Kisumu.
3 Children are carefully monitored for signs of malaria for up to four years.
4 Laboratory technician George Odongo manages the testing of blood samples for malaria at the Kombewa clinic.

3

4

CORPORATE GOVERNANCE

CONTENTS

PHOTO ESSAY

The challenge of reversing the rise in obesity

Around the world, obesity and associated conditions such as diabetes and heart disease have become increasingly prevalent as living standards have improved and diet and lifestyles have changed. In the US, around two-thirds of the population is now considered overweight and one-third is obese.

→ CONTINUED ON PAGE 107

DEAR SHAREHOLDER,

In 2015, we took steps to further strengthen our corporate governance, reinforce the role of our Board in innovation, increase the diversity of our Board, and embed strong values in our company's culture.

OUR MANDATE

Our Board is accountable for striving to create sustainable value as described 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 and processes, and with a clear understanding of its role. Our Board meets these requirements.

Our Board includes members with diverse educations, experiences, nationalities and interpersonal skills. This diversity was further strengthened when Nancy C. Andrews joined our Board in 2015. It will be further strengthened if Elizabeth Doherty and Ton Buechner are elected as new Board members at the forthcoming Annual General Meeting. For more information on these two Board member candidates, please consult our Notice of Annual General Meeting, dated January 27, 2016.

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 by an independent expert. In 2015, we conducted this performance evaluation in-house. As a result of these evaluations, our Board launched a search for the above-mentioned two new Board members to strengthen the general management and finance expertise of our Board, and decided to further deepen the business understanding of our Board members by broadening their continuing education program.

All Board members are independent, as defined by our rules and, with the exception of two of our Board members, those of key investors and proxy advisors. We have established processes to ensure our Board functions effectively. They promote efficient and balanced decision-making and seamless information transfer, enabling our Board to effectively fulfill its duties.

Our Board is primarily responsible for setting the strategic direction of Novartis and for appointing our CEO and the other Executive Committee members. We assert independent judgment and work closely with our Executive Committee, making sure our strategy is properly implemented and our ethical standards are applied.

IMPORTANT BOARD DECISIONS

One of the most important tasks of our Board is to set the strategic direction of Novartis, re-evaluate it each year, and make necessary changes in line with our mandate 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. In 2015, we completed our portfolio transformation, approved by our Board in 2014, to focus on our core businesses – Pharmaceuticals, Alcon and Sandoz – and to bring our Over-the-Counter business into a joint venture, with Novartis holding a significant minority stake. Our strategy for these businesses has not changed. It is to use science-based innovation to deliver better outcomes for patients. We aim to lead in growing areas of healthcare.

The new Research & Development Committee of the Board, created to oversee our research and development strategy and to strengthen the Board's role in innovation, met four times in 2015 to evaluate various aspects of the effectiveness and competitiveness of our research and development organization. Novartis also implemented a Board decision to create a centralized services group, Novartis Business Services, to facilitate collaboration across our divisions, and drive efficiency and productivity gains.

Finally, in 2015 we endorsed a proposal from our Executive Committee to introduce a revised set of six values to guide our employees' behavior at work. They include integrity and collaboration, and I believe they are important to the long-term success of Novartis.

For details on our strategy, please see page 16-17; for details on our culture and values, see page 18.

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.

I ensure that our Board and its committees work effectively, 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.

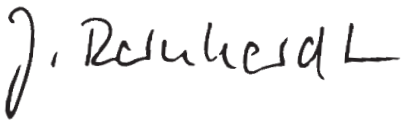
In addition, I support and mentor our CEO, but do not interfere with the operational management of Novartis. I also promote effective communication with shareholders, so that we understand your views. In this task, I am supported by our Vice Chairman, Enrico Vanni.

STRENGTHENED GOVERNANCE FRAMEWORK

As of last year, we introduced annual elections of the Chairman of the Board, of all Board members, and of Compensation Committee members, and we instituted the option for our shareholders to provide their voting instructions to the Independent Proxy electronically. Moreover, we introduced yearly binding shareholder votes on the aggregate compensation of our Board and Executive Committee, as well as a yearly non-binding shareholder vote on the Compensation Report.

IMPORTANCE OF SHAREHOLDER ENGAGEMENT

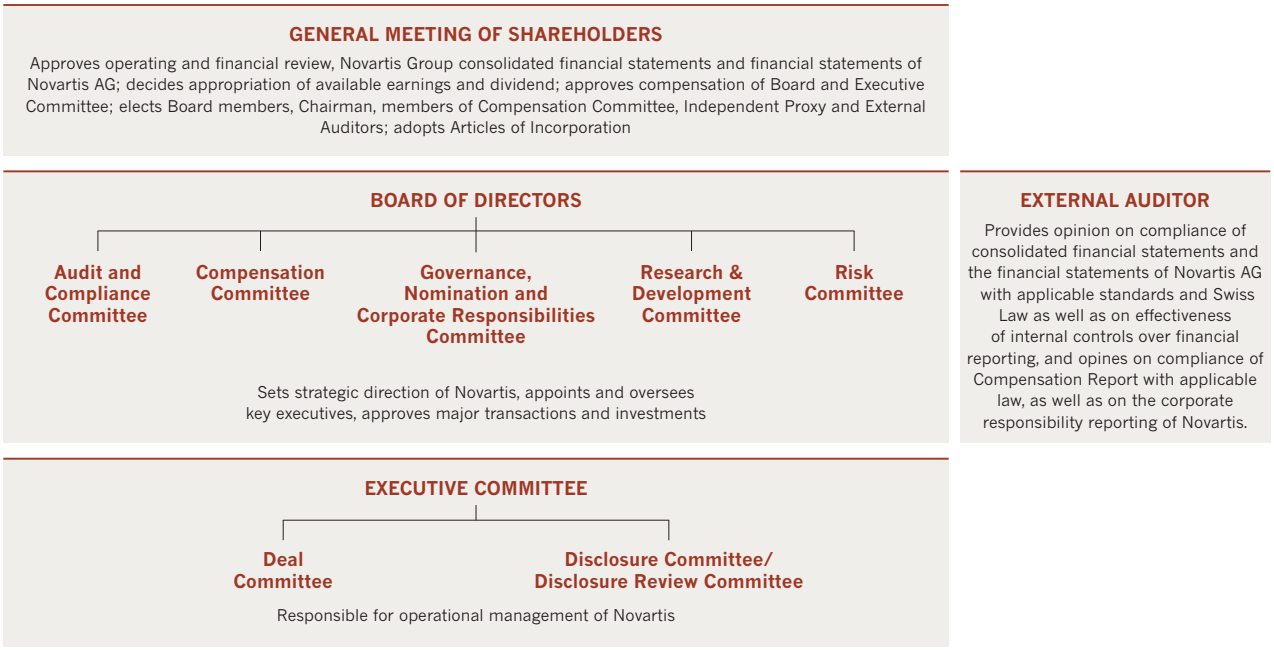
Shareholder engagement is critical to our company's long-term success. Our Board of Directors is dedicated to enhancing interactions with our shareholders. We conduct interactions in an atmosphere of trust and respect that promotes a collaborative dialogue between Novartis and our shareholders – with views and positions expressed openly to enhance mutual understanding. As part of these efforts, our governance specialists meet regularly with their peers from shareholder groups. I have also 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 non-executive and independent as defined by our rules. 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 (beginning on page 93) describe their specific qualifications.

PROCESSES

The Board's processes significantly influence 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 COMMITTEE COMPENSATION

Information on Board and Executive Committee compensation is outlined in our Compensation Report, beginning on page 108.

FULL IMPLEMENTATION OF MINDER ORDINANCE

In 2015, all elements of the rules implementing the Minder Initiative were fully introduced with the amendment of the Articles of Incorporation of Novartis AG. Key Articles of Incorporation content is presented in this Corporate Governance Report, including information on the maximum number of Board mandates of Board and Executive Committee members, and on the "say-on-pay" votes at the Annual General Meeting of Shareholders (AGM).

OUR SHARES AND OUR SHAREHOLDERS

OUR SHARES

SHARE CAPITAL OF NOVARTIS AG

As of December 31, 2015, the share capital of Novartis AG is CHF 1 338 496 500 fully paid-in and divided into 2 676 993 000 registered shares, each with a nominal value of CHF 0.50. Novartis AG 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 on the SIX Swiss Exchange (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) (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 AG – JPMorgan Chase Bank, New York – holding the Novartis shares underlying the ADRs is registered as a shareholder in the Novartis Share Register. An ADR is not a Novartis share and an ADR holder is not a Novartis AG 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 were made to the share capital of Novartis AG:

In 2013 and 2014, the share capital of Novartis AG did not change. In 2015, Novartis AG reduced its share capital by CHF 14.6 million (from CHF 1 353 096 500 to CHF 1 338 496 500) by canceling 29.2 million Novartis shares repurchased on the second trading line during 2013 and 2014.

CAPITAL CHANGES

	Number of shares			
Year	As of Jan 1	Changes in shares	As of Dec 31	Changes in CHF
2013	2 706 193 000		2 706 193 000	
2014	2 706 193 000		2 706 193 000	
2015	2 706 193 000	– 29 200 000	2 676 993 000	– 14 600 000

A table with additional information on changes in the Novartis AG share capital can be found in Note 7 to the Financial Statements of Novartis AG.

CONVERTIBLE OR EXCHANGEABLE SECURITIES

Novartis AG 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. Novartis AG does not grant any new stock options under these plans.

SHARE REPURCHASE PROGRAMS

At the AGM in February 2008, shareholders approved the sixth share repurchase program authorizing the Board to repurchase Novartis shares up to a maximum of CHF 10 billion via a second trading line on the SIX Swiss Exchange. In 2008, a total of 6 million Novartis shares were repurchased at an average price of CHF 49.42 per Novartis share and canceled in 2009. In April 2008, the share repurchases were suspended in favor of debt repayment. In December 2010, the Board announced the reactivation of the share repurchases. In 2011, 39 430 000 Novartis shares were repurchased at an average price of CHF 52.81 per Novartis share and canceled in 2012. In 2012, no Novartis shares were repurchased. In 2013, 2 160 000 Novartis shares were repurchased at an average price of CHF 70.58 per Novartis share. In 2014, 27 040 000 Novartis shares were repurchased at an average price of CHF 81.18 per Novartis share. In 2015, 29 200 000 Novartis shares bought in 2013 and 2014 were canceled, and 49 878 180 Novartis shares were repurchased at an average price of CHF 93.24 per Novartis share. With those repurchases, the sixth share repurchase program has been completed.

SHARE DEVELOPMENTS

Share developments in 2015

- Swiss-listed Novartis shares decrease 6% to CHF 86.80
- ADRs decrease 7% to USD 86.04

Novartis shares finished at CHF 86.80, a decrease of 6% from the 2014 year-end closing price of CHF 92.35. Novartis ADRs decreased in 2015 by 7% to USD 86.04 from USD 92.66. The Swiss Market Index (SMI) in comparison decreased by 1.8% in 2015, whereas the world pharmaceutical index (MSCI) grew by 2.6% during the year. Total shareholder return in 2015 was -3.4% in CHF and -3.5% in USD. Over a longer-term period, Novartis AG has consistently delivered a solid performance, providing a 9.9% compounded annual total shareholder return between January 1, 1996 and December 31, 2015, exceeding the 8.9% compounded returns of its large pharmaceutical

peers (see page 113; "Benchmark Companies") or the returns of 9.2% of the MSCI.

The market capitalization of Novartis AG based on the number of Novartis shares outstanding (excluding Novartis treasury shares) amounted to USD 208 billion as of December 31, 2015, compared to USD 224 billion as of December 31, 2014.

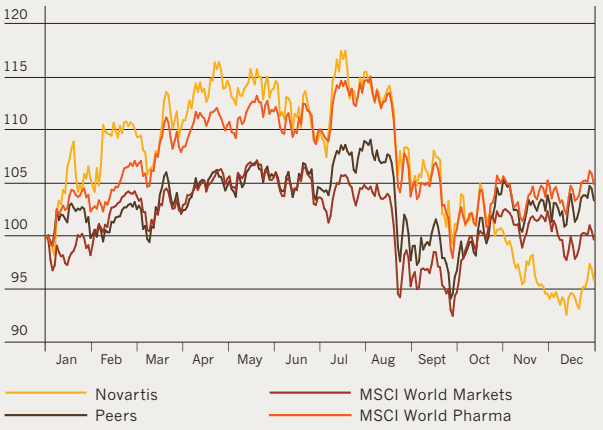
Continuously rising dividend since 1996

The Board proposes a 4% increase in the dividend payment for 2015 to CHF 2.70 per Novartis share (2014: CHF 2.60) for approval at the AGM on February 23, 2016. This represents the 19th consecutive increase in the dividend paid per share since the creation of Novartis AG in December 1996. If the 2015 dividend proposal is approved by shareholders, dividends to be paid out will total approximately USD 6.6 billion (2014: USD 6.6 billion). This would result in an expected payout ratio of 93% of net income from continuing operations (2014: 62%) and 37% of net income attributable to shareholders of Novartis AG (2014: 65%). Based on the 2015 year-end share price of CHF 86.80, the dividend yield will be 3.1% (2014: 2.8%). The dividend payment date has been set for February 29, 2016.

Direct Share Purchase Plan

Novartis AG offers a Direct Share Purchase Plan to investors residing in Switzerland. It provides an easy and inexpensive way for investors to directly purchase registered Novartis 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 2015, 7 814 shareholders were enrolled in this plan.

NOVARTIS 2015 SHARE PRICE MOVEMENT
(based on USD amounts)



NOVARTIS 1996–2015 TOTAL SHAREHOLDER RETURN
(based on USD 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 vs. indices and peers.

KEY NOVARTIS SHARE DATA

	2015	2014	2013
Issued shares	**2 676 993 000**	**2 706 193 000**	**2 706 193 000**
Treasury shares [1]	303 098 183	307 566 743	280 108 692
Outstanding shares at December 31	**2 373 894 817**	**2 398 626 257**	**2 426 084 308**
Weighted average number of shares outstanding	**2 402 806 352**	**2 425 782 324**	**2 440 849 805**

[1] Approximately 137 million treasury shares (2014: 153 million; 2013: 149 million) are held in entities that restrict their availability for use.

PER-SHARE INFORMATION[1]

	2015	2014	2013
Basic earnings per share (USD) from continuing operations	2.92	4.39	3.76
Basic earnings per share (USD) from discontinued operations	4.48	– 0.18	0.00
Total basic earnings per share (USD)	7.40	4.21	3.76
Diluted earnings per share (USD) from continuing operations	2.88	4.31	3.70
Diluted earnings per share (USD) from discontinued operations	4.41	– 0.18	0.00
Total diluted earnings per share	7.29	4.13	3.70
Operating cash flow (USD) from continuing operations	5.03	5.73	5.17
Year-end equity for Novartis AG shareholders (USD)	32.46	29.50	30.64
Dividend (CHF)[2]	2.70	2.60	2.45

[1] Calculated on the weighted average number of shares outstanding, except year-end equity
[2] 2015: proposal to shareholders for approval at the Annual General Meeting on February 23, 2016

KEY RATIOS – DECEMBER 31

	2015	2014	2013
Price/earnings ratio[1]	11.9	22.2	21.3
Price/earnings ratio from continuing operations[1]	30.1	21.3	21.3
Enterprise value/EBITDA from continuing operations	16	15	13
Dividend yield (%)[1]	3.1	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

	2015	2014	2013
Year-end ADR price (USD)	86.04	92.66	80.38
High[1]	106.12	96.65	80.39
Low[1]	83.96	78.20	63.70
Number of ADRs outstanding[2]	299 578 398	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 ADR issued.

SHARE PRICE (CHF)

	2015	2014	2013
Year-end share price	86.80	92.35	71.20
High[1]	102.30	93.80	73.65
Low[1]	82.20	70.65	58.70
Year-end market capitalization (USD billions)[2]	**208.3**	**223.7**	**194.2**
Year-end market capitalization (CHF billions)[2]	**206.1**	**221.5**	**172.7**

[1] Based on the daily closing prices.
[2] Market capitalization is calculated based on the number of shares outstanding (excluding treasury shares).

OUR SHAREHOLDERS

SIGNIFICANT SHAREHOLDERS

According to the Novartis Share Register, as of December 31, 2015, 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, holding 2.6%; and Emasan AG, with its registered office in Basel, holding 3.3%
- Nominees: Chase Nominees Ltd., London,[2] holding 8.8%; Nortrust Nominees, London, holding 3.2%; and The Bank of New York Mellon, New York, holding 4.6% through its nominees, Mellon Bank, Everett, holding 1.7% and The Bank of New York Mellon, Brussels, holding 2.9%
- ADS depositary: JPMorgan Chase Bank, New York, holding 11.2%

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, 2015:

- Capital Group Companies Inc., Los Angeles
- BlackRock Inc., New York

[1] Excluding 6.2% of the share capital held as treasury shares by Novartis AG and its entities that restrict their availability for use
[2] Previously reported as JPMorgan Chase Bank, New York, but changed to its affiliate Chase Nominees Ltd., London, which is entered as nominee in the Novartis Share Register

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: www.six-exchange-regulation.com/de/home/publications/significant-shareholders.html.

CROSS SHAREHOLDINGS

Novartis AG 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 represent the entire Novartis AG 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, 2015, Novartis AG had approximately 161 000 registered shareholders.

NUMBER OF SHARES HELD

As of December 31, 2015	Number of registered shareholders	% of registered share capital
1–100	24 096	0.06
101–1 000	96 203	1.53
1 001–10 000	36 616	3.83
10 001–100 000	3 387	3.32
100 001–1 000 000	470	5.16
1 000 001–5 000 000	73	5.79
5 000 001 or more [1]	34	50.79
Total registered shareholders/shares	160 879	70.48
Unregistered shares		29.52
Total		**100.00**

[1] Including significant registered shareholders as listed above

REGISTERED SHAREHOLDERS BY TYPE

As of December 31, 2015	Shareholders in %	Shares in %
Individual shareholders	96.14	11.76
Legal entities	3.79	39.65
Nominees, fiduciaries and ADS depositary	0.07	48.59
Total	**100.00**	**100.00**

REGISTERED SHAREHOLDERS BY COUNTRY

As of December 31, 2015	Shareholders in %	Shares in %
France	2.49	0.92
Germany	5.21	1.91
Luxembourg	0.03	1.08
Switzerland [1]	88.60	40.93
United Kingdom	0.50	23.77
United States	0.30	27.53
Other countries	2.87	3.86
Total	**100.00**	**100.00**

Registered shares held by nominees are shown in the country where the company/affiliate entered in the Novartis Share Register as shareholder has its registered seat
[1] Excluding 6.2% of the share capital held as treasury shares by Novartis AG and its entities that restrict their availability for use

SHAREHOLDER RIGHTS

Shareholders have the right to receive dividends, to vote and to execute such other rights as granted under Swiss law and the Articles of Incorporation.

Right to vote

Each Novartis share registered with the right to vote entitles the holder to one vote at General Meetings. Novartis 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 (for shareholder registration and voting restrictions, see pages 83-84).

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 Novartis AG shareholder.

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 external auditors
- Approval of the management report (if required) and of the consolidated financial statements
- Approval of the 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 maximum aggregate amounts of compensation of the Board (for the period from an AGM until the next AGM) and of the Executive Committee (for the financial year following the AGM)
- 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. Shareholders representing Novartis 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 Novartis 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 AG offers shareholders the opportunity to use an online platform (the Sherpany Platform) to receive notices of future General Meetings exclusively by email and to electronically give their instructions to the Independent Proxy, grant powers of attorney to other shareholders, and order their admission cards online. The General Meeting registration form enables shareholders who are not yet registered on the Sherpany Platform to order detailed documents related to opening a Sherpany account. They may also do so by contacting the Novartis Share Register. Shareholders can deactivate their online account at any time and again receive invitations in paper form.

Other rights associated with a registered Novartis share may only be exercised by the shareholder, its legal representative, another shareholder with the right to vote, or the Independent Proxy, 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 the 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 2015, no exemptions were requested. Exemptions are in force for the registered significant shareholders listed on page 81 under Our Shareholders – Significant Shareholders, and for Norges Bank (Central Bank of Norway), Oslo, which as of December 31, 2015, 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 rather low in Switzerland, Novartis AG 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 may, upon request, grant an exemption from this restriction if the nominee discloses the names, addresses and 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 on page 81 under – Our Shareholders – Significant Shareholders, and for the nominee Citi Bank, London, which in 2015 requested an exemption, but as of December 31, 2015 was not registered in the Novartis Share Register.

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 RESTRICTIONS 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 (as per 1.1.2016 according to the Swiss Federal Act on Financial Infrastructures), anyone who – directly, indirectly or acting in concert with third parties – acquires equity securities exceeding 33 1/3% 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 AG 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 and "golden parachute" agreements benefiting Board members, Executive Committee members, or other members of senior management. Furthermore, employment contracts with Executive Committee members do not contain notice periods or contract periods exceeding 12 months, or commissions for the acquisition or transfer of enterprises or severance payments.

GENERAL COMPENSATION PROVISIONS

Non-executive members of the Board of Directors

Compensation of non-executive members of the Board includes fixed compensation elements only. In particular, non-executive members of the Board of Directors shall receive no company contributions to any pension plan, no performance-related elements, and no financial instruments (e.g., options).

Members of the Executive Committee

The members of the Executive Committee receive fixed and variable, performance-related compensation. Fixed compensation comprises of the base salary and may include other elements and benefits such as contributions to pension plans. Variable compensation may be structured into short-term and long-term compensation elements. Short-term variable compensation elements shall be governed by performance metrics that take into account the performance of Novartis and/or parts thereof, and/or individual targets. Achievements are generally measured based on the one-year period to which the short-term compensation relates. The long-term compensation plans are based on performance metrics that take into account strategic objectives of Novartis (such as financial, innovation, shareholder return and/or other metrics). Achievements are generally measured based on a period of not less than three years.

Additional Amount

If the maximum aggregate amount of compensation already approved by the General Meeting is not sufficient to cover the compensation of newly appointed or promoted Executive Committee members, Novartis may pay out compensation, in a total amount up to 40% of the total maximum aggregate amount last approved for the Executive Committee per compensation period, to newly appointed or promoted Executive Committee members.

For detailed information on the compensation of the Board and Executive Committee, see the Compensation Report on pages 108-137.

OUR BOARD OF DIRECTORS

COMPOSITION OF THE BOARD OF DIRECTORS AND ITS COMMITTEES (AS PER DECEMBER 31, 2015)

BOARD OF DIRECTORS

Chairman: J. Reinhardt
Vice Chairman: E. Vanni

N. Andrews
D. Azar
V. Briner
S. Datar
A. Fudge
P. Landolt
A. von Planta
C. Sawyers
W. Winters

Audit and Compliance Committee	Compensation Committee	Governance, Nomination and Corporate Responsibilities Committee	Research & Development Committee	Risk Committee
S. Datar (Chairman)	E. Vanni (Chairman)	P. Landolt (Chairman)	J. Reinhardt (Chairman)	A. von Planta (Chairman)
D. Azar	S. Datar	A. Fudge	N. Andrews	V. Briner
E. Vanni	A. Fudge	C. Sawyers	D. Azar	S. Datar
A. von Planta	W. Winters	A. von Planta	C. Sawyers	A. Fudge
			E. Vanni	

ELECTION AND TERM OF OFFICE

Board members, the Chairman, and Compensation Committee members are elected annually and individually by shareholders at the General Meeting. Board members whose term of office has expired are immediately eligible for re-election.

The average tenure of Board members is six years. A Board member must retire after reaching age 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	2015	2016
Enrico Vanni, Ph.D.	CH	1951	2011	2015	2016
Nancy C. Andrews, M.D., Ph.D	US	1958	2015	2015	2016
Dimitri Azar, M.D.	US	1959	2012	2015	2016
Verena A. Briner, M.D.	CH	1951	2013	2015	2016
Srikant Datar, Ph.D.	US	1953	2003	2015	2016
Ann Fudge	US	1951	2008	2015	2016
Pierre Landolt, Ph.D.	CH	1947	1996	2015	2016
Andreas von Planta, Ph.D.	CH	1955	2006	2015	2016
Charles L. Sawyers, M.D.	US	1959	2013	2015	2016
William T. Winters	UK/US	1961	2013	2015	2016

BOARD PROFILE

BOARD COMPOSITION

The composition of the Board must align with our status as a listed company, business portfolio, geographic reach and culture. The Board must be diverse in all aspects. 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; marketing; banking, finance and accounting; human resources; legal and public affairs; and risk management.

INDIVIDUAL BOARD MEMBER PROFILE

Board members should have the following personal qualities:

- Interact with other Board members to build an effective and complementary Board
- Establish trusting relationships
- Apply independence of thought
- Be challenging but supportive in the boardroom
- Influence without creating conflict by applying a constructive, non-confrontational style
- Listen well and offer advice based on sound judgment
- Be able and willing to commit adequate time to Board and committee responsibilities
- Be open to personal feedback and seek to be responsive

— Do not have existing board memberships or hold other positions that could lead to a permanent 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

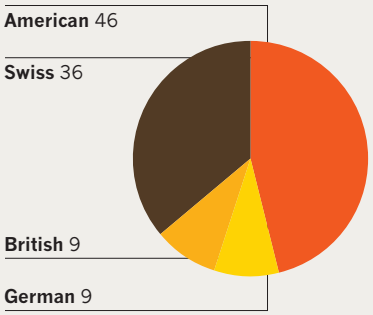
Board members' biographies (pages 93–96) highlight the specific qualifications that led the Board to conclude they are qualified to serve on the Board, which is diverse in terms of background, credentials, interests and skills.

BOARD DIVERSITY

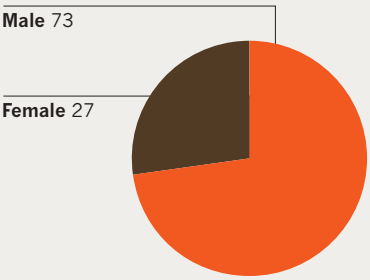
The diversity of a board of directors is critical to its effectiveness. Thus, when the Governance, Nomination and Corporate Responsibilities Committee of Novartis identifies new Board member candidates to be proposed to shareholders for election, the maintenance and improvement of the Board's diversity is an important criterion. The Board's aspiration is to have a diverse Board in all aspects. This includes nationality, gender, background and experience, age, tenure, viewpoints, interests, and technical and interpersonal skills.

DIVERSITY

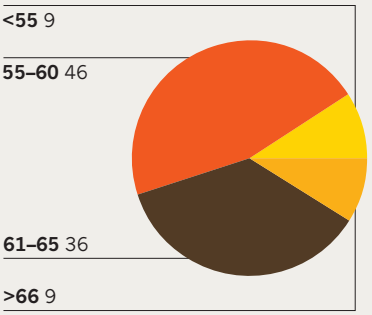
NATIONALITY (%)



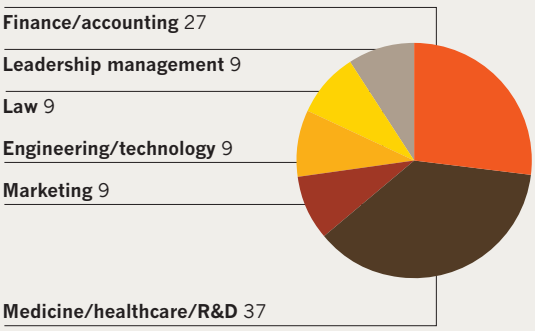
GENDER (%)



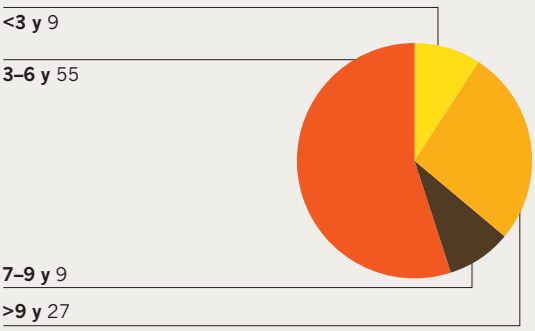
AGE (%)



BACKGROUND/EXPERIENCE (%)



TENURE (%)



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 for shareholders.

The Board has delegated certain responsibilities to five committees, as set out below. Responsibilities described with the terms "overseeing" or "reviewing" are subject to final Board approval. The 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 for deliberation and decision-making. Moreover, committees ensure 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	Members	Number of meetings held in 2015/ approximate average duration (hrs) of each meeting attendance	Link
Board of Directors		**10/6:00**	
The primary responsibilities of the Board of Directors include: — Setting the strategic direction of the Group — Appointing, overseeing and dismissing key executives, and planning their succession — Approving major transactions and investments — Determining the organizational structure and governance of the Group — Determining and overseeing financial planning, accounting, reporting and controlling — Approving annual financial statements and corresponding financial results releases	**Joerg Reinhardt[1]**	**10**	Articles of Incorporation of Novartis AG Regulations of the Board of Directors, its Committees and the Executive Committee of Novartis AG (Board Regulations) www.novartis.com/ corporate-governance
	Enrico Vanni	10	
	Nancy C. Andrews[3]	8	
	Dimitri Azar	10	
	Verena A. Briner	10	
	Srikant Datar	10	
	Ann Fudge	10	
	Pierre Landolt	10	
	Andreas von Planta	10	
	Charles L. Sawyers	10	
	William T. Winters	10	
Audit and Compliance Committee		**7/2:30**	
The primary responsibilities of this committee include: — Supervising external auditors and selecting and nominating external auditors for election by the meeting of shareholders — Overseeing internal auditors — Overseeing 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 — 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[1,2]**	**7**	Charter of the Audit and Compliance Committee www.novartis.com/ corporate-governance
	Dimitri Azar	7	
	Enrico Vanni	7	
	Andreas von Planta	7	
Compensation Committee		**5/2:30**	
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 CEO — Deciding on the compensation of Executive Committee members — Preparing the Compensation Report and submitting to the Board for approval The Compensation Committee has the authority to retain external consultants and other advisors.	**Enrico Vanni[1]**	**5**	Charter of the Compensation Committee www.novartis.com/ corporate-governance
	Srikant Datar	5	
	Ann Fudge	5	
	William T. Winters[4]	4	

[1] Chairman
[2] Audit Committee Financial Expert as defined by the US Securities and Exchange Commission
[3] as of AGM February 2015
[4] as of April meeting

Responsibilities	Membership comprises	Number of meetings held in 2015/ approximate average duration (hrs) of each meeting attendance	Link
Governance, Nomination and Corporate Responsibilities Committee		**3/2:00**	
The primary responsibilities of this committee include: — Designing, reviewing and recommending to the Board corporate governance principles — Identifying candidates for election as Board members — 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 — 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 — 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[1]** Ann Fudge Charles L. Sawyers Andreas von Planta	**3** 2 3 3	Charter of the Governance, Nomination and Corporate Responsibilities Committee www.novartis.com/ corporate-governance
Research & Development Committee		**4/8:00**	
The primary responsibilities of this committee include: — Monitoring research and development, and bringing recommendations to the Board — Assisting the Board in the oversight and evaluation 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, emerging scientific trends and activities critical to the success of research and development, and 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 — Reviewing such other matters in relation to the company's 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[1]** Nancy C. Andrews[2] Dimitri Azar Charles L. Sawyers Enrico Vanni	**4** 3 4 4 3	Charter of the Research & Development Committee www.novartis.com/ corporate-governance
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 — Reviewing with management, internal auditors and external auditors the identification, prioritization and management of risks, the accountabilities and roles of the functions involved in 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[1]** Verena A. Briner Srikant Datar Ann Fudge	**4** 4 4 4	Charter of the Risk Committee www.novartis.com/ corporate-governance

[1] Chairman
[2] as of AGM February 2015

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.

CHAIRMAN

Joerg Reinhardt has been 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, he can lead the Board to represent the interests of all stakeholders, being accountable to them and creating sustainable value through effective governance. The independent chairmanship also ensures an appropriate balance of power between the Board and Executive Committee.

In this role, Joerg Reinhardt:

- Provides leadership to the Board
- Supports and mentors the CEO
- Supported by the Governance, Nomination and Corporate Responsibilities Committee, ensures effective succession plans for the Board and the Executive Committee
- 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 Board's performance is annually evaluated
- Ensures introduction programs for new Board members and continuing education as well as specialization for all Board members
- Ensures effective communication with the company's shareholders
- Promotes effective relationships and communication between Board and Executive Committee members

VICE CHAIRMAN

Enrico Vanni has been independent, non-executive Vice Chairman since February 22, 2013.

In this role, he:

- Leads the Board in case and as long as the Chairman is incapacitated
- Chairs the sessions of independent Board members and leads independent Board members if and as long as the Chairman is not independent

BOARD MEETINGS

The Board has meetings with Executive Committee members as well as private meetings without them.

In 2015, there were 10 Board meetings. Because all Board members are independent, no separate meetings of the independent Board members were held in 2015.

KEY ACTIVITIES OF OUR BOARD AND COMMITTEES IN 2015

The Board meeting agendas in 2015 included the following standard topics: strategy; Group targets; personal objectives of the CEO; mergers and acquisitions, and business development and licensing review; financial and business reviews; major projects; investments and transactions; the Annual Report; and the General Meeting agenda. Topics addressed during private meetings included Board self-evaluation and performance assessment of senior management, as well as succession planning.

In addition, in 2015 our Board and its committees focused on a number of special topics, including:

BOARD OF DIRECTORS:

Our biosimilars development pipeline, the pricing and competitive environment in pharmaceuticals, the rollout of our new Values and Behaviors, a review of our brand identity, the proposal to revise our Articles of Incorporation and Board regulations to implement the "Minder Legislation," the analysis of the AGM 2015 and investor feedback from our corporate governance roadshow, the issue of new bonds, and the renewal of existing credit facilities.

GOVERNANCE, NOMINATION AND CORPORATE RESPONSIBILITIES COMMITTEE:

Investor feedback from our corporate governance roadshow and how to address it; the search profile for and discussion of potential new Board members to strengthen the general management and financial expertise background of our Board; a review of our corporate responsibility activities, including the proposal to introduce an "Access Brand" (a first-of-its-kind portfolio of products aimed at increasing access to medicines in low- and low-middle-income countries); and reviewing the activities of the Novartis Foundation (a philanthropic organization pioneering innovative healthcare models that have a transformational impact on the health of the poorest populations).

COMPENSATION COMMITTEE:

The metrics that underpin the Annual Incentive and the performance-based Long-Term Incentive plans; the constituents of the Novartis healthcare peer group used for benchmarking and variable compensation purposes; the rollout of the compensation system of Executive Committee members to the broader Novartis executive group, as well as approving the Long-Term Incentive plans for the rest of the Novartis employee population; investor feedback from the corporate governance roadshow; and expense policies.

AUDIT AND COMPLIANCE COMMITTEE:
The accounting of the portfolio transformation, the Novartis IT security organization and challenges, the roles of the Audit and Compliance Committee and the Risk Committee to avoid potential gaps or overlaps, working toward integrated assurance, specific accounting and compliance topics, compensation disclosures, the revision of the Internal Audit Charter, and the definition of growth products.

RISK COMMITTEE:
Key business risks at Alcon; pharmacovigilance and quality preparedness; benchmarking the enterprise risk management organization and processes; risks related to pricing, data privacy, IT security, and data integrity in manufacturing and development; and risks and opportunities related to the Step Change program (a program evolving our approach to business practices and customer relationships to strengthen our focus on performance with integrity).

RESEARCH & DEVELOPMENT COMMITTEE:
The Novartis portfolio of R&D projects in the following areas: respiratory diseases; infectious diseases; autoimmune, transplantation and immunological diseases; cardiovascular and metabolic diseases; immuno-oncology; and musculoskeletal diseases. The committee also supported the setting and evaluation of innovation-related long-term performance metrics.

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 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 the company's independence criteria. These include, inter alia, (i) a Board member not having received direct compensation of more than USD 120 000 per year from Novartis, except for dividends or Board compensation, within the last three years, (ii) a Board member not having been an employee of Novartis within the last three years, (iii) a family member not having been an executive officer of Novartis within the last three years, (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 USD 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 on December 17, 2015, 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, 2015. There are no significant business relationships of any Board member with Novartis AG or with any other Novartis Group company.

MANDATES OUTSIDE THE NOVARTIS GROUP

No Board member may hold more than 10 additional mandates in other companies, of which no more than four shall be in other listed companies. Chairmanships of the boards of directors of other listed companies count as two mandates. Each of these mandates is subject to Board approval.

The following mandates are not subject to these limitations:

a) Mandates in companies that are controlled by Novartis AG
b) Mandates that a Board member holds at the request of Novartis AG or companies controlled by it. No Board member shall hold more than five such mandates.
c) Mandates in associations, charitable organizations, foundations, trusts and employee welfare foundations. No Board member may hold more than 10 such mandates.

"Mandates" means those in the supreme governing body of a legal entity that is required to be registered in the commercial register or a comparable foreign register. Mandates in different legal entities that are under joint control are deemed one mandate.

The Board may issue regulations that determine additional restrictions, taking into account the position of the respective member.

LOANS AND CREDITS

No loans or credits shall be granted to members of the Board.

BOARD PERFORMANCE AND EFFECTIVENESS EVALUATION

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 qualitative review led by the Chairman. The Chairman has discussions with each Board member, and then with the entire Board. Further, the committee evaluations are discussed by the respective committee and the results are debriefed to the Board. Any suggestion 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. In 2015, the performance evaluation was conducted internally.

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.

This review covered topics including Board composition; purpose, scope and responsibilities; processes and governance of the Board and its committees; meetings and pre-reading material; team effectiveness; and 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 were discussed at the January 2016 meeting of the Board. It was concluded that the Board and its committees operate effectively.

INFORMATION AND CONTROL SYSTEMS OF THE BOARD VIS-À-VIS MANAGEMENT

INFORMATION ON 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 this information 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 (CFO), 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 & Accounting, Compliance and Quality, as well as the Head of the Global Business Practices Office 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; the heads of the divisions, Novartis Business Services (NBS) and the Novartis Institutes for BioMedical Research (NIBR); the heads of finance of the divisions, NBS and NIBR; and the heads of the following corporate functions: Treasury, Tax, Financial Reporting & 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 Group Risk Office and the risk owners of the divisions report on a regular basis to the Risk Committee. The Group General Counsel, the Head of Group Risk, the Head of Internal Audit, and other senior executives are invited to these meetings on a regular basis.

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 USD and on a constant currency basis.
- Consolidated balance sheet as of the month end in accordance with IFRS in USD
- Consolidated cash flow on a monthly, quarter-to-date and year-to-date basis in accordance with IFRS in USD
- Supplementary data on a monthly, quarterly and year-to-date basis such as free cash flow, gross and net debt, headcount, personnel costs, working capital, and earnings per share on a USD basis where applicable

Constant currencies, core results, free cash flow, net debt and related target figures are non-IFRS measures. An explanation of non-IFRS measures can be found on pages 165-169 of the Operating and Financial Review 2015.

The above information is made available to Board members on a monthly basis. An analysis of key deviations from the 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 USD 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. This 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 Internal Audit scope, audit plans and results.

RISK MANAGEMENT

The Group Risk Office 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 on pages 108-137).

Organizational and process measures have been established to identify and mitigate risks at an early stage. Organizationally, the individual divisions and functions 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; and the Business Practices Office – providing support and controlling the effectiveness of risk management by the divisions and functions in these respective areas.

BOARD OF DIRECTORS

Joerg Reinhardt, Ph.D.
Chairman of the Board of Directors
German, age 59

Function at Novartis AG Joerg Reinhardt, Ph.D., has been Chairman of the Board of Directors of Novartis since 2013. He is also Chairman of the Research & Development Committee and Chairman of the Board of Trustees of the Novartis Foundation.

Other activities Mr. Reinhardt previously was chairman of the board of management and the executive committee of Bayer HealthCare, Germany. Prior to that, he was Chief Operating Officer of Novartis from 2008 to 2010, and Head of the Vaccines and Diagnostics Division of Novartis from 2006 to 2008. He was also Chairman of the Board of the Genomics Institute of the Novartis Research Foundation in the United States from 2000 to 2010, a member of the supervisory board of MorphoSys AG in Germany from 2001 to 2004, and 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 at Sandoz and later Novartis, including Head of Development.

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 and of global supplier for pharmaceutical, healthcare and life sciences industries.

Enrico Vanni, Ph.D.
Vice Chairman of the Board of Directors
Swiss, age 64

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 is Vice Chairman of the Board of Directors and 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 a board member of several companies in industries from healthcare to private banking – including Advanced Oncotherapy PLC in England, and non-listed companies such as Lombard Odier SA, Banque Privée BCP (Suisse) SA, Eclosion2, 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 the International Business Machines Corp. (IBM) in California, United States, and joined McKinsey 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/biotechnology 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 consulting company and leadership of its European pharmaceutical practice.

Nancy C. Andrews, M.D., Ph.D.
Member of the Board of Directors
American, age 57

Function at Novartis AG Nancy C. Andrews, M.D., Ph.D., has been a member of the Board of Directors since February 27, 2015. She qualifies as an independent Non-Executive Director and is a member of the Research & Development Committee.

Other activities Dr. Andrews is dean of the Duke University School of Medicine and vice chancellor for academic affairs at Duke University in the United States. She is also a professor of pediatrics, pharmacology and cancer biology at Duke. Prior to joining Duke, she was director of the Harvard/MIT M.D.-Ph.D. Program, and dean of basic sciences and graduate studies as well as professor of pediatrics at Harvard Medical School in the US. From 1993 to 2006, Dr. Andrews was a biomedical research investigator at the Howard Hughes Medical Institute, also in the US. Her research expertise is in iron homeostasis and mouse models of human diseases.

Professional background Dr. Andrews received her Ph.D. in biology from the Massachusetts Institute of Technology in the US and her M.D. from Harvard Medical School. She completed her residency and fellowship trainings in pediatrics and hematology/oncology at Boston Children's Hospital and the Dana-Farber Cancer Institute, both in the US, and served as an attending physician at Boston Children's Hospital. Dr. Andrews also served as president of the American Society for Clinical Investigation. Additionally, she was elected as a fellow of the American Association for the Advancement of Science and to membership in the US National Academy of Sciences, the National Academy of Medicine, and the American Academy of Arts and Sciences. She serves on the council of the National Academy of Medicine and on the board of directors of the American Academy of Arts and Sciences.

Key knowledge/experience *Leadership and healthcare experience* – dean of leading US university medical school; member of various medical, scientific and ethical institutions and commissions. *Education and scientific experience* – research scientist and professor at leading US universities.

BOARD OF DIRECTORS (CONTINUED)

Dimitri Azar, M.D.
Member of the Board of Directors
American, age 56

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 and 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 is on the boards of trustees of the Chicago Medical Society, the Chicago Ophthalmological Society, the Association for Research in Vision and Ophthalmology, and the Tear Film and Ocular Surface Society.

Professional background Dr. Azar began his career at the American University of Beirut Medical Center in Lebanon, and completed his fellowship and residency training at the Massachusetts Eye and Ear Infirmary at Harvard Medical School in the US. 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 Eye Institute at the Johns Hopkins Hospital School of Medicine in the US, and then 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 in the US.

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 64

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 highly-specialized medicine (IVHSM), Switzerland. She is also a member and former president of the Swiss Society of Internal Medicine.

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, United Kingdom, and an honorary fellow of the American College of Physicians, the European Federation of Internal Medicine, the Polish Society 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 62

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 in the United States. He is also a member of the boards of directors of ICF International Inc., Stryker Corp. and T-Mobile US, all in the US.

Professional background Mr. Datar graduated in 1973 with distinction in mathematics and economics from the University of Bombay in India. He is a chartered accountant, and holds two master's degrees and a doctorate from Stanford University in the US. 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 US. His research interests are in the areas of cost management, measurement of productivity, new product development, innovation, 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 also 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 64

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 and is a member of the Risk Committee; the Compensation Committee; and the Governance, Nomination and Corporate Responsibilities Committee.

Other activities Ms. Fudge is vice chairman and senior independent director of Unilever NV, London and Rotterdam. She is a trustee of the New York-based Rockefeller Foundation and the Washington, D.C.-based Brookings Institution, and is chair of the US Programs Advisory Panel of the Bill & Melinda Gates Foundation. Ms. Fudge is also a trustee of WGBH public media and serves on the board of the Council on Foreign Relations.

Professional background Ms. Fudge received her bachelor's degree from Simmons College in the United States and her Master of Business Administration from Harvard University Graduate School of Business, also in the US. She is former chairman and CEO of Young & Rubicam Brands, New York. Before that, she served as president of the Beverages, Desserts and Post Division of Kraft Foods Inc. in the US.

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* – former board member of global technology company; board member of global consumer goods company.

Pierre Landolt, Ph.D.
Member of the Board of Directors
Swiss, age 68

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 chairman of the Sandoz Family Foundation, overseeing its development 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. Additionally, he is vice chairman of the Montreux Jazz Festival Foundation and a board member of Amazentis SA, Switzerland. In Brazil, Mr. Landolt is 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 chairman of AxialPar Ltda., Brazil, an investment company focused on sustainable development. In 2000, he co-founded Eco-Carbone 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 60

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 and the Governance, Nomination and Corporate Responsibilities Committee.

Other activities Mr. von Planta is a board member of Helvetia Holding AG in Switzerland, and also serves on the boards of various Swiss subsidiaries of foreign companies and other non-listed Swiss companies, including A.P. Moller Finance SA, HSBC Private Bank (Switzerland) SA, Socotab Frana SA, Raymond Weil SA and Générale-Beaulieu Holding SA. Additionally, he is chairman of the regulatory board of the SIX Swiss Exchange AG.

Professional background Mr. von Planta holds lic. iur. and Ph.D. degrees from the University of Basel in 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* – board member of insurance company. *Industry experience* – partner at leading Swiss law firm.

BOARD OF DIRECTORS (CONTINUED)

Charles L. Sawyers, M.D.
Member of the Board of Directors
American, age 56

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 and the Governance, Nomination and Corporate Responsibilities Committee.

Other activities In the United States, Dr. Sawyers is chair 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 for Cancer Research and of the American Society for Clinical Investigation. He is also 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 US, and worked at the Jonsson Comprehensive Cancer Center at the University of California, Los Angeles in the US 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 US.

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 of medical honor society. *Education experience* – professor at leading US university.

William T. Winters
Member of the Board of Directors
British/American, age 54

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 and is a member of the Compensation Committee.

Other activities Mr. Winters is CEO and a board member of Standard Chartered, based in London. He previously ran Renshaw Bay, an alternative asset management firm, and was co-CEO of JPMorgan's investment bank from 2003 to 2010. Additionally, he was a commissioner on the UK Independent Commission on Banking in 2010 and 2011.

Professional background Mr. Winters received his bachelor's degree from Colgate University in the United States, and his Master of Business Administration from the Wharton School of the University of Pennsylvania, also in the US. He joined JPMorgan in 1983 and held management roles across several market areas and in corporate finance. Mr. Winters is a board member of Colgate University, and also serves on the boards of the International Rescue Committee, the Young Vic theater and the Print Room theater in the United Kingdom. He was awarded the title of Commander of the Order of the British Empire in 2013.

Key knowledge/experience *Leadership and global experience* – CEO and executive director of leading international banking group; former chairman and CEO of alternative asset management firm; 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.

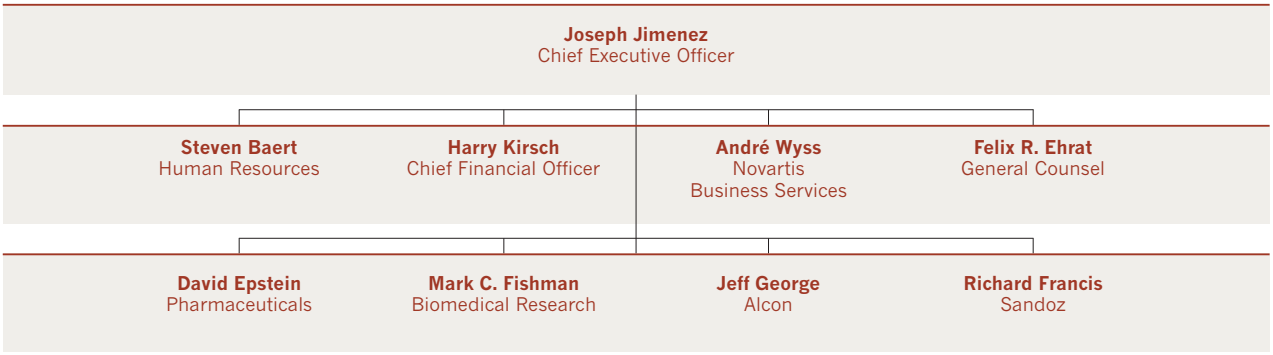
Daniel Vasella, M.D.

CORPORATE SECRETARY

Charlotte Pamer-Wieser, Ph.D.

OUR MANAGEMENT

COMPOSITION OF THE EXECUTIVE COMMITTEE



EXECUTIVE COMMITTEE COMPOSITION

The Executive Committee is headed by the CEO. Its members are appointed by the Board.

There are no contracts between Novartis and third parties whereby Novartis would delegate any business management tasks to such third parties.

EXECUTIVE COMMITTEE ROLE AND FUNCTIONING

The Board has delegated to the Executive Committee overall responsibility for and oversight of 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 – and implementing those approved
- 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 two sub-committees: The Deal Committee (members are the CEO, CFO, Division Head Pharmaceuticals, Group General Counsel, and Head of Biomedical Research) reviews important acquisitions and divestments of companies and businesses, and business development deals, and makes recommendations to the Executive Committee. The Disclosure Committee (members are the CEO, CFO, and Group General Counsel) 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.

CEO

In addition to other Board-assigned duties, the CEO leads the Executive Committee, building and maintaining an effective executive team. With the support of the Executive Committee, the CEO:

- Is responsible for the operational management of Novartis
- Develops strategy proposals to be recommended to the Board and ensures that approved strategies are implemented
- Plans human resourcing to ensure that Novartis has the capabilities and means to achieve its plans, and that robust management succession and management development plans are in place and presented to the Board
- 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 effective communication with shareholders and other stakeholders
- Ensures that business performance is consistent with business principles, as well as legal and ethical standards
- 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 of the company
- Ensures that the flow of information to the Board is accurate, timely and clear

MANDATES OUTSIDE THE NOVARTIS GROUP

No Executive Committee member may hold more than six additional mandates in other companies, of which no more than two additional mandates shall be in other listed companies. Each of these mandates is subject to Board approval. Executive Committee members are not allowed to hold chairmanships of the boards of directors of other listed companies.

The following mandates are not subject to these limitations:

a) Mandates in companies that are controlled by Novartis AG
b) Mandates that an Executive Committee member holds at the request of Novartis AG or companies controlled by it. No Executive Committee member shall hold more than five such mandates.
c) Mandates in associations, charitable organizations, foundations, trusts and employee welfare foundations. No Executive Committee member may hold more than 10 such mandates.

"Mandates" means those in the supreme governing body of a legal entity that is required to be registered in the commercial register or a comparable foreign register. Mandates in different legal entities that are under joint control are deemed one mandate.

The Board may issue regulations that determine additional restrictions, taking into account the position of the respective member.

LOANS AND CREDITS

No loans or credits shall be granted to members of the Executive Committee.

EXECUTIVE COMMITTEE

Joseph Jimenez
Chief Executive Officer of Novartis
American, age 56

Joseph Jimenez has been Chief Executive Officer (CEO) of Novartis since 2010. Under his leadership, and driven by a commitment to R&D investment, Novartis has developed one of the largest pipelines of self-originated drugs in the industry. Mr. Jimenez has also transformed the company's portfolio to focus on leading businesses with innovation power and global scale in pharmaceuticals, eye care and generics.

Prior to serving as CEO of Novartis, Mr. Jimenez held the position of Division Head, Novartis Pharmaceuticals. He joined Novartis in 2007 as Division Head, Novartis Consumer Health.

Previously, Mr. Jimenez served as president and CEO of the North American and European businesses for the H.J. Heinz Company. Additionally, he served on the board of directors of Colgate-Palmolive Co. from 2009 to 2015, and of AstraZeneca PLC from 2002 to 2007.

Mr. Jimenez is a member of the board of directors of General Motors Co. 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 41

Steven Baert has been Head of Human Resources (HR) of Novartis since February 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 HR positions at Bristol-Myers Squibb Co. and Unilever.

Mr. Baert represents Novartis on the board of GSK Consumer Healthcare. He holds a Master of Business Administration from the Vlerick Business School in Belgium and a Master in Law from the Katholieke Universiteit Leuven, also in Belgium. Additionally, he has a Bachelor in Law from the Katholieke Universiteit Brussels.

Felix R. Ehrat, Ph.D.
Group General Counsel of Novartis
Swiss, age 58

Felix R. Ehrat, Ph.D., has been Group General Counsel of Novartis since 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 chairman of SwissHoldings (Federation of Industrial and Service Groups in Switzerland). He is a board member of Geberit AG and avenir suisse (a think tank for economic and social issues). Previously, he was, among other things, chairman and a 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 Switzerland in 1990. In 1986, he completed an LL.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 Corporate and M&A Law Committee from 2007 to 2008, and Association Internationale des Jeunes Avocats, where he was president from 1998 to 1999.

EXECUTIVE COMMITTEE (CONTINUED)

David Epstein
Division Head, Novartis Pharmaceuticals
American, age 54

David Epstein has been Division Head of 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 US 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 the US in 1984. He received a Master of Business Administration in finance and marketing from New York's Columbia University Graduate School of Business, also in the US, in 1987.

Mark C. Fishman, M.D.
President of the Novartis Institutes for BioMedical Research
American, age 64

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, as well as professor of medicine at Harvard Medical School, both in the United States. He 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 the US 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 US. Additionally, he is a fellow of the American Academy of Arts and Sciences, also in the US.

Richard Francis
Division Head, Sandoz
British, age 47

Richard Francis has been Division Head of Sandoz since May 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, he was senior vice president of the company's US commercial organization. From 1998 to 2001, he was at Sanofi in the United Kingdom, where he held various marketing roles across the company's urology, analgesics and cardiovascular products. He has also 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 42

Jeff George has been Division Head of Alcon since May 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 26 000 associates across 164 countries. Prior to Sandoz, he was Head of Emerging Markets for the Middle East, Africa, Southeast Asia and CIS for Novartis Pharmaceuticals.

Mr. George joined Novartis in 2007 as Head of Commercial Operations for Western and Eastern Europe for Novartis Vaccines. Before joining Novartis, he was senior director of strategic planning and business development at Gap Inc. in San Francisco, United States. Between 2001 and 2004, he worked at McKinsey & Company, also in San Francisco, as an engagement manager.

Mr. George received a Master of Business Administration from Harvard University in the US in 2001. He graduated in 1999 with a master's degree from the Johns Hopkins University's School of Advanced International Studies, also in the US, 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 the US.

Harry Kirsch
Chief Financial Officer of Novartis
German, age 50

Harry Kirsch has been Chief Financial Officer (CFO) of Novartis since 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 expirations. 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 pharmaceutical 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 represents Novartis on the board of GSK Consumer Healthcare. He studied industrial engineering and economics at the University of Karlsruhe in Germany ("Diplom-Wirtschaftsingenieur").

André Wyss
Global Head, Novartis Business Services and Country President for Switzerland
Swiss, age 48

André Wyss has been Global Head of Novartis Business Services (NBS) since May 2014. In July 2014, he was also appointed Country President for Switzerland. He is a member of the Executive Committee of Novartis.

Mr. Wyss joined Novartis in 1984 as a chemistry apprentice. Before being appointed Head of NBS, he served as US Country Head and President of Novartis Pharmaceuticals Corporation. Prior to that, he was 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. He is a member of the board of economiesuisse.

SECRETARY

Bruno Heynen

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 AGM. 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 Group-consolidated financial statements comply with 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, on the Compensation Report as well as on the corporate responsibility reporting of Novartis.

The Audit and Compliance Committee, acting on behalf of the Board, is responsible for overseeing the activities of PwC. In 2015, this committee held seven meetings. PwC was invited to six of these meetings to attend during the discussion of agenda items that dealt with accounting, financial reporting or auditing matters, and any other matters relevant to its 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 committee and PwC discuss PwC's independence from Novartis and its management.

The Audit and Compliance Committee recommended to the Board to approve the audited Group-consolidated financial statements and the separate parent company financial statements of Novartis AG for the year ended December 31, 2015. The Board proposed the acceptance of these financial statements for approval by the AGM.

The Audit and Compliance Committee regularly evaluates the performance of PwC and once a year determines whether PwC should be proposed to the AGM 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 have about the performance of PwC, or about 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 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.

APPROVAL OF AUDIT AND NON-AUDIT SERVICES

The Audit and Compliance Committee approves a budget for audit services whether recurring or non-recurring in nature, as well as audit-related services not related to internal controls over financial reporting. PwC reports quarterly to the Audit and Compliance Committee regarding the extent of services provided in accordance with the applicable pre-approval and the fees for services performed to date. The Audit and Compliance Committee individually approves all audit-related services relating to internal controls over financial reporting, tax services and other services prior to the start of work.

AUDIT AND ADDITIONAL FEES

PwC charged the following fees for professional services rendered for the 12-month periods ended December 31, 2015 and December 31, 2014:

	2015 USD million	2014 USD million
Audit Services	25.9	29.7
Audit-Related Services	1.7	2.0
Tax Services	0.0	0.2
Other Services	0.1	0.1
Total	**27.7**	**32.0**

Audit services include work performed to issue opinions on Group-consolidated financial statements and parent company financial statements of Novartis AG, 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, audits of the adoption of new accounting policies, audits of information systems and the related control environment, reviews of quarterly financial results, as well as procedures required to issue consents and comfort letters.

Audit-related services include 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 AG is subject to the laws of Switzerland, in particular Swiss company and securities laws, and to the securities laws of the US as applicable to foreign private issuers of securities.

In addition, Novartis AG is subject to the rules of the SIX Swiss Exchange, including the Directive on Information Relating to Corporate Governance.

Novartis AG is also subject to the rules of NYSE as applicable to foreign private issuers of securities. NYSE requires Novartis AG to describe any material ways in which its corporate governance differs from that of domestic US companies listed on the exchange. These differences are:

- Novartis AG shareholders do not receive written reports directly from Board committees.
- External auditors are appointed by shareholders at the AGM, as opposed to being appointed by the Audit and Compliance Committee.
- While shareholders cannot vote on all equity compensation plans, they are entitled to hold separate, yearly binding shareholder votes on Board and Executive Committee compensation.
- 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 CEO's compensation and for evaluating his performance.

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 of Novartis AG (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: 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

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 three operating divisions: Pharmaceuticals, Alcon (eye care), and Sandoz (generics). In addition, there are NBS (shared services organization, delivering services to the divisions), NIBR (the company's global pharmaceutical research organization), and Group Corporate activities. In 2015, Animal Health and Vaccines were divested, and the Over-the-Counter business (OTC) was brought into a joint venture with GlaxoSmithKline's (GSK) business in this area – with Novartis holding a 36.5% minority stake in this joint venture.

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, symbol: HCBA). The total market value of the 25% free float of Novartis India Limited was USD 97.6 million at December 31, 2015, 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 USD 390.5 million and that of the shares owned by Novartis was USD 292.9 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 (ISIN CH0012032113, symbol: RO). The market value of the Group's interest in Roche Holding AG, as of December 31, 2015, was USD 14.9 billion. The total market value of Roche Holding AG was USD 241.08 billion. Novartis does not exercise control over Roche Holding AG, which is independently governed, managed and operated.

The Novartis Group owns a 36.5% share of a joint venture created by GSK and Novartis, which combined the Novartis OTC and the GSK Consumer Healthcare businesses. Novartis holds four of the 11 seats of the joint venture's board. Furthermore, Novartis has certain minority rights and exit rights, including a put option that is exercisable as of March 2, 2018.

POLITICAL CONTRIBUTIONS

Novartis makes political contributions to support the political dialogue on public policy issues of relevance to Novartis, such as healthcare innovation and access to medicines.

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 fully comply with applicable laws, regulations and industry codes.

Novartis only makes political contributions in countries where such contributions by corporations are legal and where political contributions from corporations are considered to reflect "good corporate citizenship". Moreover, Novartis only makes modest political contributions so as to not create any dependency from the political parties receiving these contributions.

In 2015, Novartis made political contributions totaling approximately USD 1.13 million, thereof approximately USD 680 000 in Switzerland, USD 235 000 in the US, USD 150 000 in Japan, USD 45 000 in Australia, USD 11 000 in Canada, and USD 8 000 in the UK. In addition, in the US, a political action committee established by Novartis used funds received from Novartis employees (but not from the company) to make political contributions totaling approximately USD 280 000.

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. Swiss political parties are completely privately financed and the contributions of companies are a crucial part thereof. This private financing of parties is a deeply-rooted trait of the Swiss political culture, and contributing to that system is an important element of being a good corporate citizen.

SHAREHOLDER RELATIONS

The CEO, with the CFO and 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 AGM, meetings with groups of shareholders and individual shareholders, and written and electronic communications.

At the AGM, the Chairman, 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, in full respect of applicable laws, 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 that provides information on the Group's results and operations. In addition, 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 www.novartis.com/investors.

Novartis also publishes a consolidated Corporate Responsibility Performance Report, which details progress and demonstrates the company's commitment to be a leader in corporate responsibility. This 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 of the UN Global Compact.

Information contained in reports and releases issued by Novartis is 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 email service on this site.

WEBSITE INFORMATION

Topic	Information
Share capital	Articles of Incorporation of Novartis AG www.novartis.com/corporate-governance Novartis key share data www.novartis.com/key-share-data
Shareholder rights	Articles of Incorporation of Novartis AG www.novartis.com/corporate-governance Investor Relations information www.novartis.com/investors
Board regulations	Board regulations www.novartis.com/corporate-governance
Executive Committee	Executive Committee www.novartis.com/executive-committee
Novartis code for senior financial officers	Novartis Code of Ethical Conduct for CEO and Senior Financial Officers www.novartis.com/corporate-governance
Additional information	Novartis Investor Relations www.novartis.com/investors

1 Program participant David Thomas undergoes exercise therapy.
2 The program's director, Prof. Amy Rothberg, assesses Jacob Jensen's progress toward his weight loss goals.
3 Prof. Rothberg at home in the US state of Michigan
4 Mr. Thomas inside a device that measures the body's fat content and energy expenditure

3

"We use a non-judgmental, scientific approach that resonates with a large number of people. When they come to us they feel it's time to do something, so they're ready to listen and ready to commit"

CONTINUED FROM PAGE 75

As anyone who has struggled to control his or her weight knows, the process can be fraught with frustration. But a team in the US state of Michigan has developed an approach that is delivering promising results.

The weight management program at the University of Michigan uses a combination of diet, exercise, behavior modification and drugs to help patients achieve a major, sometimes life-changing transformation. Their progress is supervised by a team of specialists who help them achieve and sustain weight loss during the two-year program.

The program's director, Prof. Amy Rothberg, is one of the first US doctors to receive certification in the field of obesity medicine. She said the program offers a solution that is both complex and deceptively simple: "We use a non-judgmental, scientific approach that resonates with a large number of people. When they come to us they feel it's time to do something, so they're ready to listen and ready to commit."

Those entering the program have an average body mass index – a measure of weight relative to height – of above 40, which classifies them as severely obese. Some have had surgery to reduce their stomach size, but even this has failed to control their weight.

Since the first pilot in 2010, a total of 1 800 people have been through the program. Male participants have lost an average of 56 pounds (25 kg) and female participants have lost an average of 47 pounds (21 kg). A few individuals shed as many as 230 pounds (104 kg). Some patients with diabetes have been able to dispense with insulin injections to control their blood sugar.

Half of those who participated in the weight loss program also took part in associated research examining the effects of the program on clinical outcomes, costs and quality of life, helping demonstrate the potential benefits for individual patients and for society.

COMPENSATION REPORT

CONTENTS

PHOTO ESSAY

Improving access to healthcare in rural Vietnam

Dr. Chang As Xinh, 37, is one of just 15 doctors who deliver medical care to more than 40 000 people living in Mù Cang Chai, a rural district of Yen Bai province in northeast Vietnam. It's a very poor part of the country rich in natural beauty and inhabited mostly by H'mong people, an ethnic minority.

→ CONTINUED ON PAGE 137

Dear shareholder,

As Chairman of the Compensation Committee of the Board of Directors, I am pleased to share with you the 2015 Compensation Report of Novartis AG.

At Novartis, our mission is to discover new ways to improve and extend people's lives. We use science-based innovation to address some of society's most challenging healthcare issues, discovering and developing breakthrough treatments and finding new ways to deliver them to as many people as possible. Our company also wants to be an employer of choice and to provide superior returns to our shareholders. During the last two years, the Compensation Committee undertook significant work to:

- Better align the executive compensation system with our long-term business strategy and shareholder interests
- Strengthen the corporate governance framework
- Implement all elements of the Minder Ordinance to Board and executive compensation

The Compensation Committee would like to acknowledge the strong shareholder support at the 2015 Annual General Meeting (AGM) for all of the remuneration-related resolutions, and express appreciation for the opportunity to engage many of our shareholders on compensation topics in 2015. The Compensation Committee would also like to thank Dr. Ulrich Lehner for his services on the Compensation Committee and welcome William Winters as a new member.

2015 company performance

In 2015, Novartis progressed in all of its key priorities. The company completed its portfolio transformation ahead of schedule, achieved major innovation milestones with *Entresto*, *Cosentyx* and biosimilars, captured cross-divisional synergies with the creation of the Novartis Business Services unit and continued to build a high-performing organization. Currencies had a very negative impact on our reported results in USD as the USD strengthened significantly vs. all major currencies in 2015. Operationally, in constant currencies, the company was marginally below its sales target but slightly above its net income and free cash flow targets. Pharmaceuticals and Sandoz delivered strong performances, while Alcon negatively impacted consolidated results. The company improved core margin despite the currency impact. Although, in USD, Novartis' TSR was -3.5% in 2015, TSR was +53.4% for the period 2013-2015, corresponding to the usual three-year cycle of our long-term plans.

2015 CEO compensation

For 2015, our CEO was awarded total compensation of CHF 11 596 560. This amount included an Annual Incentive of CHF 3 090 758 (representing 100% of target) based on a combination of his and our company's performance, as summarized above. Half of the Annual Incentive was delivered in cash, and the remaining half was delivered in restricted share units, which will have a three-year vesting period. His total compensation also included Long-Term Incentive grants with a target value of CHF 6 181 580, which will be subject to performance conditions for the 2015–2017 cycle.

Compensation systems

While the Compensation Committee continued to evaluate the effectiveness of our compensation program, 2015 was a year of stability and refinement of our existing compensation systems following major changes to the Swiss and international regulatory environment. During 2015, the Compensation Committee made only small changes to further align compensation to long-term business strategy and shareholder interests for all associates of Novartis. With effect from 2016, the new compensation system for Executive Committee members will be rolled out to all key executives. Our company has also embedded our Values and Behaviors in the talent framework and ensured that our rigorous performance management process is upheld at all levels of the organization. The new program has the full support of our Board of Directors. We believe that it provides a competitive advantage to Novartis in the marketplace for executive talent.

2016 AGM

The Compensation Committee is committed to continued engagement between shareholders and our company to fully understand diverse viewpoints and discuss the important connections between our company's compensation program, business strategy, and long-term financial and operating performance. As was the case last year and in line with our Articles of Incorporation, shareholders will be asked to approve the following:

- Total maximum amount of Board compensation from the 2016 AGM to the 2017 AGM
- Total maximum amount of Executive Committee compensation for the 2017 financial year

Shareholders will also be asked to endorse this Compensation Report in an advisory vote.

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

2015 EXECUTIVE COMMITTEE COMPENSATION SYSTEM (page 114–117)

The following components are included:

	Fixed compensation and benefits		Variable compensation		
	Annual base compensation	**Pension and other benefits**	**Annual Incentive**	**Long-Term Performance Plan (LTPP)**	**Long-Term Relative Performance Plan (LTRPP)**
Purpose	Reflects associates' responsibilities, job characteristics, experience and skill sets	Establish a level of security for associates and their dependents tailored to local market practices 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 (2015)	3 years (2015–2017)	3 years (2015–2017)
Performance measures	n/a	n/a	Based on a payout matrix made up of: — Individual balanced scorecard, including financial targets and individual objectives — Assessed Values and Behaviors	Based on: — 75% Novartis Cash Value Added — 25% divisional long-term innovation milestones	Based on Novartis relative total shareholder Return vs. versus our peer group of 12 healthcare companies[1]
Delivery (at the end of the performance period for variable compensation)	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 companies in our peer group consist of Abbott, AbbVie, Amgen, AstraZeneca, Bristol-Myers Squibb, Eli Lilly & Co., 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)

2015 EXECUTIVE COMMITTEE COMPENSATION (page 120–126)

Amounts paid or granted during the 2015 financial year:

(CHF)						**Total compensation**
CEO compensation	2 060 500	263 721	3 090 758	4 121 054[1]	2 060 527[1]	11 596 560
Executive Committee compensation (excluding CEO)	7 429 769	5 071 392	11 230 142	11 973 697[1]	4 652 661[1]	40 357 661
Total	9 490 269	5 335 113[2]	14 320 900	16 094 751	6 713 188	**51 954 221**[2]

[1] The amounts shown in these columns represent the underlying share value of the grant date target value of the number of Performance Share Units granted to each Executive Committee member for the performance cycle 2015–2017.
[2] It includes an amount of CHF 58 757 for mandatory employer contributions paid by Novartis to governmental social security systems. This amount is out of total employer contributions of CHF 3 457 097, and provides a right to the maximum future insured government pension benefit for the Executive Committee member.

2016 EXECUTIVE COMMITTEE COMPENSATION SYSTEM

Compensation opportunity
As for all associates, Executive Committee members may have received a merit increase, based on their 2015 performance, and/or an adjustment to benchmark.

Performance measures
Annual Incentive
No changes have been made to the performance measures under the Annual Incentive.

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.

COMPENSATION REPORT AT A GLANCE
continued

Board compensation

2015 BOARD COMPENSATION SYSTEM (page 129)

Delivery: 50% cash, 50% shares

(CHF)	Annual fee
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 — Research & Development Committee[2] — Risk Committee	60 000
Membership of Audit and Compliance Committee	60 000
Membership of the following committees: — Compensation Committee — Governance, Nomination and Corporate Responsibilities Committee — Research & Development Committee — Risk Committee	30 000

[1] The Chairman also received company pension contributions until the 2015 AGM (when they ceased), and payment for loss of other entitlements with his previous employer for a total value of EUR 2 665 051 staggered over the period from 2014 to 2016.
[2] The Chairman receives no additional committee fees for chairing the Research & Development Committee.

2015 BOARD COMPENSATION (page 130–133)

Amounts earned during the 2015 financial year

(CHF)	Cash	Equity	Other benefits[1]	Total
Chairman Dr. Joerg Reinhardt	1 900 000	1 900 000	29 197	3 829 197
Other Board members	1 601 417	2 331 917	17 145	3 950 479
Total	**3 501 417**	**4 231 917**	**46 342**	**7 779 676**[2]

[1] It includes an amount of CHF 21 502 for mandatory employer contributions paid by Novartis to Swiss governmental social security systems. This amount is out of total employer contributions of CHF 429 806, and provides a right to the maximum future insured government pension benefit for the Board member. No occupational pension contributions have been provided to the Chairman from the 2015 AGM onwards.
[2] Please see page 132 for a reconciliation between the amount reported in this table and the amount approved by shareholders at the 2015 AGM to be used to compensate Board members for the period from the 2015 AGM to the 2016 AGM. The amount paid is within the maximum amount approved by shareholders.

2016 BOARD COMPENSATION SYSTEM

The Board compensation system will remain unchanged in 2016.

Compensation governance

GOVERNANCE AND RISK MANAGEMENT (page 133–134)

Decision-making authorities with regard to compensation, within the parameters set by the shareholders' meeting

Decision on	Authority
Compensation of Chairman and other Board members	Board of Directors
Compensation of CEO	Board of Directors
Compensation of Executive Committee members	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 by Board and Executive Committee members

EXECUTIVE COMMITTEE COMPENSATION PHILOSOPHY AND PRINCIPLES

NOVARTIS COMPENSATION PHILOSOPHY

The compensation philosophy aims to ensure that the Executive Committee is rewarded according to its success in implementing the company strategy and to its 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 vs. competitors
Business ethics	The 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

The Novartis strategy is to use science-based innovation to deliver better patient outcomes. We aim to lead in growing areas of healthcare. 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 of Directors 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's focus on science-based innovation, the Board of Directors 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 focused its portfolio to have three market-leading divisions in innovative pharmaceuticals, eye care and generics. Finally, to ensure that Novartis is a high-performing organization over the long term, the Board of Directors 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 opportunities. 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 below). In the event of under- or over-performance, the actual compensation may be lower or higher than the benchmark median.

While 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 Executive Committee members annually in comparison to the relevant compensation levels of similar positions at peer companies. For this purpose, the Compensation 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 Executive Committee members.

For the CEO and Executive Committee members, the company benchmarks against global competitors in the healthcare industry with similar business models, size and needs for talent and skills. The Compensation Committee reviews the companies in our compensation peer group annually and considers adjustments 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 & Co.
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.

2015 EXECUTIVE COMMITTEE COMPENSATION SYSTEM

The 2015 Executive Committee compensation system consists of the following components:

Fixed compensation and benefits		Variable compensation		
Annual base compensation	Pension and other benefits	Annual Incentive	Long-Term Performance Plan (LTPP)	Long-Term Relative Performance Plan (LTRPP)

FIXED COMPENSATION AND BENEFITS

ANNUAL BASE COMPENSATION

The level of base compensation reflects each associate's key responsibilities, job characteristics, experience and skill sets. It is paid in cash, typically monthly.

Base compensation is reviewed annually, and any increase reflects 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 are country-specific, influenced by local market practices 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 Note 25 to the Group's audited consolidated financial statements (page 218).

Novartis may provide other benefits in a specific country according to local market practices and regulations, such as a company car, and 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. It is paid half in cash and half in shares deferred for three years. The formula for the target Annual Incentive is outlined below:

ANNUAL INCENTIVE FORMULA

Annual base compensation	x	Target incentive %	=	**Target Annual Incentive value**

Performance measures

The Annual Incentive is based on a payout matrix made up 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 targets are weighted 60% and individual objectives are weighted 40%. As reported last year, as of 2015, innovation was removed from the Group financial targets of the Annual Incentive and instead included in the Long-Term Performance Plan, as the Compensation Committee's view is that innovation achievements are more effectively measured on a multiyear basis. For more details on the target-setting and performance management process, please refer to page 118.

Group or divisional financial targets

Within the Group or divisional financial targets, each measure such as sales or net income is weighted individually. The CEO and function heads share the same Group financial targets (described further below). In place of the Group targets, division heads have divisional targets that include divisional sales, operating income, free cash flow as a percentage of sales, and market share of peers. The Board of Directors sets the Group and divisional financial targets at the start of each performance year in constant currencies, and evaluates achievement against these targets at the end of that year.

Individual objectives

Individual objectives differ for each Executive Committee member depending on his responsibilities, and may include additional financial and non-financial targets. Examples of additional financial targets 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 2015 are set out in the table on the following page:

2015 BALANCED SCORECARD MEASURES USED FOR THE CEO

Performance measures	Weight	Breakdown of performance measures
Group financial targets	60%	Group net sales Corporate net result Group net income Group free cash flow as % of sales
CEO individual objectives	40%	Additional financial targets (e.g., EPS) Innovation and growth Portfolio review Cross-divisional synergies High-performing organization
Overall total	**100%**	

Novartis 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. Novartis Values and Behaviors are an essential element in the annual assessment of Executive Committee members. For more details on the performance assessment process of the Novartis Values and Behaviors, please refer to page 119.

Performance evaluation and payout determination

Following a thorough review of the two elements that compose the Annual Incentive – performance against the balanced scorecard objectives and an assessment against the Novartis Values and Behaviors – a rating from 1 to 3 is assigned to each.

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 for Executive Committee members taking into account the ranges shown. Payouts are capped at 200% of target.

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 expectations	Fully met expectations	Exceeded expectations
			Values and Behaviors assessment		

The payout matrix for the Annual Incentive equally recognizes performance against the objectives in the balanced scorecard, and the assessment against the Novartis Values and Behaviors.

Form and delivery 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, known as 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. Following the vesting period, settlement is made in unrestricted Novartis shares or American Depositary Receipts (ADRs).

If a participant leaves Novartis due to voluntary resignation or misconduct, unvested shares (and RSUs) are forfeited. The Board of Directors and the 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 all of the cash portion of their Annual Incentive in Novartis shares or ADRs (US only) that will not be subject to conditions. In the US, awards may also be delivered in cash under the US-deferred compensation plan.

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 members, 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

The performance factor can range from 0% to 200% of target. 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 US, 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. When 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 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 to the Group's audited consolidated financial statements (page 222).

The Board of Directors and the 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 who have a significant impact on the long-term success of Novartis were invited to participate in the LTPP, as of 2015.

In the 2013 and earlier Compensation Reports, there was a different plan that was also called LTPP. In this Compensation Report (as in the 2014 Compensation Report), that plan has been renamed Old Long-Term Performance Plan (OLTPP), and is described on page 127.

Performance measures

Awards under the LTPP are based on three-year performance objectives and split as follows:

	75% Financial	**25% Innovation**
Measure	Novartis Cash Value Added	Up to 10 key innovation milestones
CEO and 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 incentivizes both sales growth and margin improvement as well as asset efficiency. A summary of the calculation is below:

CALCULATION FORMULA FOR NCVA
in constant currencies

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 % – WACC[1]) x gross operational assets

The NCVA 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 in constant currencies. 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 10 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.

A payout matrix has been established for this metric that allows a 0–150% payout for the achievement of target milestones. If all target milestones are achieved, a 150–200% payout may be awarded for extraordinary additional achievement. The CEO and function heads receive the weighted average of divisional innovation payouts.

The Research & Development Committee assists the Board of Directors and the Compensation Committee in setting the innovation targets and reviewing achievements at the end of the cycle.

Long-Term Relative Performance Plan (LTRPP)

This is the second of the two Long-Term Incentive plans.

Overview

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

The 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 USD 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 2015–2017 performance cycle is the same as for benchmarking the compensation of Executive Committee members and is comprised of: Abbott, AbbVie, Amgen, AstraZeneca, Bristol-Myers Squibb, Eli Lilly & Co., 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

In line with our principle to allow shareholders to assess the relationship between company performance and pay, the financial, innovation and individual targets under the Annual Incentive plan and the LTPP will be disclosed in the Compensation Report with the achievements against such targets at the end of each performance cycle. Targets under the Annual Incentive plan and the LTPP are considered confidential at the time of setting. Communicating such targets before the end of the performance cycle would allow substantial insight into the company's forward-looking strategies and could therefore place the company at a competitive disadvantage.

2016 EXECUTIVE COMMITTEE COMPENSATION SYSTEM

The Compensation Committee has evaluated the Executive Committee compensation system and has decided that it will remain unchanged in 2016. The Compensation Committee believes that it is operating as intended, supports the company's strategy, and is aligned with market and best practice.

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 Executive Committee members, are subject to a three-step formal process:

Objective setting → **Performance evaluation** → **Compensation determination**

CEO OBJECTIVE SETTING

At the beginning of the year, the CEO presents the Group and divisional financial and innovation targets of our variable compensation plans to both the Compensation Committee and the Board of Directors for approval. At the same time, the CEO discusses his individual objectives for the coming year with the Chairman of the Board of Directors.

The Board of Directors reviews and approves these objectives, which are incorporated into the Annual Incentive and Long-Term Incentive plans.

Annual Incentive

The Group financial and individual targets proposed by the CEO are challenged and approved by both the Compensation Committee and the Board of Directors. The targets set for the Annual Incentive support our ambition to be a leader in the healthcare industry.

Financial and innovation measure of LTPP

The NCVA target is based on the company's long-range strategic plan approved by the Board of Directors to deliver long-term sustainable growth and productivity as well as efficient use of its assets. The Compensation Committee believes that the NCVA target is ambitiously set to create long-term value for shareholders.

The innovation targets of the LTPP are largely aligned with the major development projects outlined in the pipeline schedule of the Annual Report (see page 52). The targets are recommended by the divisions and reviewed by the Research & Development Committee. The innovation targets are focused on challenging milestones of critical importance to the long-term success of the business, and should be best- or first-in-class development projects that can significantly advance treatment outcomes for patients worldwide.

Relative TSR: 100% of LTRPP

The payout matrix for the LTRPP can be found on page 117. The Compensation Committee believes that the LTRPP payout matrix is aligned with the company's pay-for-performance principle, including a very significant reduction in the actual payout relative to target payout if the company's TSR is below the median of the peer group.

CEO PERFORMANCE EVALUATION

The Board of Directors periodically assesses Group business performance as well as 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 of the Board of Directors.

For the year-end review, the CEO prepares and presents to the Chairman of the Board of Directors, and later to the full 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.

CEO COMPENSATION DETERMINATION

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 on 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 OTHER EXECUTIVE COMMITTEE MEMBERS (EXCLUDING THE CEO)

Executive Committee members propose the divisional financial and innovation targets for approval by the CEO and, subsequently, by the Board of Directors and Compensation Committee. In addition, each Executive Committee member agrees on individual objectives with the CEO, who also reviews members' performance at mid-year and year-end.

At year-end, following his evaluation, the CEO meets with the Chairman of the Board of Directors, who reviews the performance of Executive Committee members. Subsequently, the CEO presents and discusses at the Board of Directors meeting his recommended performance rating for each member.

Later, in the presence of the CEO and taking into consideration the recommendations of the Board of Directors, the Compensation Committee decides at its January meeting on the variable compensation of Executive Committee members for the prior year and on their target compensation for the coming year. The Compensation Committee informs the Board of Directors of its final decisions, and the CEO later shares these decisions with Executive Committee members.

ASSESSMENT OF VALUES AND BEHAVIORS AT NOVARTIS

Values and Behaviors have been an integral part of the company's compensation system since its foundation. In 2015, to reinforce the culture of the company, Novartis rolled out new Values and Behaviors – which are innovation, quality, collaboration, performance, courage and integrity.

What we value	Observed behaviors
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
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 and goes the extra mile — Puts team results before own success and acknowledges contributions of others — Prioritizes, decides and makes things happen with urgency
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 and caring, and shows trust, respect and empathy — Lives by the Code of Conduct even when facing resistance or difficulties

These values are embedded in all aspects of employees' lives at Novartis, from recruitment and development to promotions, performance assessments through 360-degree evaluations and organizational employee surveys, as well as Annual Incentive awards to measure individual and organizational performance against our values. As part of the Annual Incentive award process, training programs and toolkits were established to evaluate behavior related to the six new values. They are one of the elements used to assess associates' performance.

During 2015, we further improved the framework for measuring individual performance against our values, ensuring that fair, objective assessments can be made in a uniform way across all levels of the organization. The assessment is part of a rigorous management process review in which observed Values and Behaviors are evaluated based on globally-defined principles. The assessment initially takes place during a discussion between associates and line managers, followed by a calibration and validation at multiple levels of the organization to allow for a fair, consistent, objective and transparent evaluation. During the calibration sessions, line managers share the proposed ratings of their direct reports with peers to ensure all apply a common framework, and they seek input and feedback on observed behaviors.

The Values and Behaviors assessment for the CEO and other Executive Committee members is calibrated by the Board of Directors.

2015 EXECUTIVE COMMITTEE COMPENSATION

2015 CEO COMPENSATION

The 2015 compensation of the CEO is outlined in detail within this section:

Base salary: The CEO's base salary remained CHF 2 060 500 for 2015.

Benefits: The CEO received pension benefits of CHF 175 289 and other benefits of CHF 88 432 during 2015.

Annual Incentive: The Annual Incentive performance is measured in constant currencies to reflect the operational performance that can be influenced. Overall, the company met most of its financial targets for the year set by the Board of Directors in constant currencies. Group results were negatively impacted by Alcon's performance and by the slow-down of emerging markets, offset by strong results from Pharmaceuticals and Sandoz. The Group was marginally behind its sales target, while Group net income was slightly ahead of target mainly due to strong cost management. Corporate net result was significantly ahead of target mainly due to lower corporate costs and taxes. Performance in Group free cash flow as a percentage of sales was slightly above target mainly due to higher cash flows from operating activities.

Currency movements had a significant negative impact on the reported results vs. target (in USD, sales: –5.2 billion, net income and free cash flow (FCF): –1.6 billion each) that were adjusted in the Annual Incentive calculation.

2015 CEO BALANCED SCORECARD

	Performance metrics for continuing operations (weight)	Target[1]	Achievement vs. target[2] (in constant currencies)
Group financial targets (60%)	Group net sales (30%)	USD 55 289 m	Slightly below
	Corporate net result[3] (20%)	USD –2 284 m	Significantly exceeded
	Group net income (30%)	USD 8 996 m	Slightly exceeded
	Group FCF as % of sales (20%)	20.5%	Slightly exceeded
	Overall achievement for Group financial targets		**Slightly above target**
Individual objectives (40%)	**Additional key financial targets for continuing operations** Additional financial targets were not all met. Including adjustments, in constant currencies, core operating income, EPS and core EPS targets were met, while reported operating income was slightly missed. Emerging Market growth and Divisional share of peers (Pharmaceuticals, Alcon and Sandoz) were below target (for the latter mainly due to currency impact).		Slightly below
	Innovation and growth 2015 was another excellent year for innovation and growth. The company successfully achieved 20 major approvals and 14 major submissions. Novartis had the highest number of FDA approvals[4] in the industry (4 out of 45 novel drugs). Major innovation milestones were achieved in 2015 with *Entresto* (approved in the EU), *Cosentyx* (approved for AS and PsA in EU) and submission of biosimilars etanercept and pegfilgrastim. *Zarxio* was the first biosimilar approved under the BPCIA pathway. Sandoz also received US approval of *Glatopa*. The NIBR unit launched a new immuno-oncology research team that delivered significant progress in building a portfolio with several candidates already in clinical trials and more expected to enter the clinic by the end of 2016.		Exceeded
	Portfolio review With the announcement on March 2, 2015 of the completion of the transactions with GSK, and the announcement on July 31, 2015 of the divestment of the Vaccines influenza business to CSL, Novartis successfully completed its portfolio review ahead of schedule (target for completion: H2 2015). A total of 17 000 associates transferred from Novartis to GSK and CSL. The completion of the portfolio review has improved Novartis' competitive position resulting in a more focused company with leading positions in innovative pharmaceuticals, generics and eye care.		Slightly exceeded
	Cross-divisional synergies Novartis Business Services, our shared services organization, continued to execute on its priorities and the transformation of the organization is developing as scheduled. The company generated approximately USD 3 216 million in total productivity gains (target: USD 2 746 million) by leveraging our scale. In 2015 we announced plans to close or divest 6 sites. All of these actions increased the productivity of the company.		Exceeded
	High-performing organization (e.g., quality, talent) Across the Novartis network, for the full year, there were 192 inspections, including 31 conducted by the FDA. 189 of the 192 inspections in the full year were good or satisfactory. The outcomes of three inspections are still pending. In addition, the company continued to roll out the process of upgrading its compliance and integrity processes as well as Novartis Values and Behaviors. A new talent management strategy was established and some progress was made on the talent pipeline and talent management initiatives. The company was disappointed with certain compliance and reputational challenges.		At target
	Overall achievement for individual objectives		**At target**

[1] The target was set using July 2014 forward currency exchange rates

[2] Adjusted for significant currency movements (in USD, sales: -5.2 billion, net income and FCF: -1.6 billion each) and other adjustments including the changes in income from associated companies

[3] Includes corporate cost, income from associated companies, net financial income and income taxes

[4] Source: FDA's Center for Drug Evaluation and Research's (CDER's) 2015 annual report

Following a thorough performance evaluation, including assessed Values and Behaviors (see page 119 for further details of the performance management process and assessment of Values and Behaviors), the Compensation Committee determined that the CEO's Annual Incentive performance factor would be 100%. The value of his Annual Incentive award was determined as follows:

2015 CEO ANNUAL INCENTIVE

	Annual base salary CHF thousands	x	Target incentive %	x	Performance factor %	=	**Final award CHF thousands**
Annual Incentive	2 061	x	150%	x	100%	=	**3 091** [1]

[1] 50% of the Annual Incentive was paid in cash and 50% was paid as 19 390 RSUs, which have a three-year vesting period.

The table below shows how the 2015 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 2015–2017 cycle. An overview of these plans is outlined on pages 116-117.

CEO LONG-TERM INCENTIVE GRANTS CYCLE 2015–2017

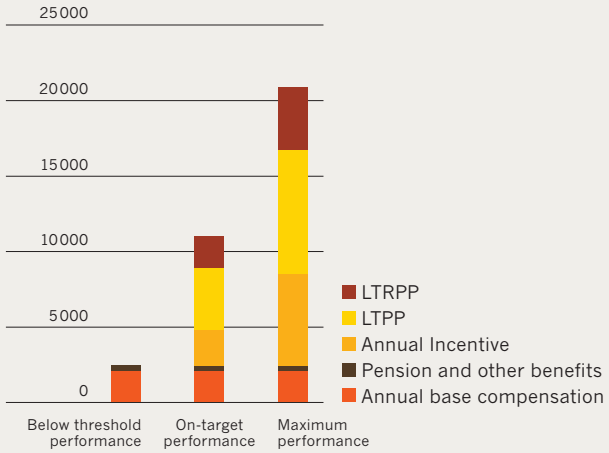
	Annual base salary CHF thousands	x	Target incentive %	=	**Grant value CHF thousands**	Target number of PSUs [1]
LTPP	2 061	x	200%	=	**4 122**	48 626
LTRPP	2 061	x	100%	=	**2 061**	24 313

[1] Achievement will be reported in the 2017 Compensation Report. The grant value has been converted into a target number of PSUs based on a price of CHF 84.75 per Novartis share.

2015 CEO TARGET COMPENSATION

In January 2015, at target, the CEO's compensation was made up of 18% annual base compensation, 2% pension and other 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.

2015 CEO COMPENSATION OPPORTUNITY[1]
(in CHF thousands)



[1] Values of LTPP and LTRPP exclude share price development over performance period, as well as dividend equivalent rights.

EXECUTIVE COMMITTEE COMPENSATION TABLES (AUDITED)

COMPENSATION OF EXECUTIVE COMMITTEE MEMBERS FOR 2015

The following table discloses the compensation paid or granted to the CEO and other Executive Committee members for performance in 2015.

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 2015 are disclosed in full). This includes the restricted shares and RSUs granted under the Annual Incentive, which will vest three years following the grant based on plan rules. For awards granted under the LTPP and LTRPP, the target values (based on 100% achievement) at the time of grant are shown.

The performance and vesting value of the LTPP and LTRPP for the performance cycle 2015–2017 will be reported in the 2017 Compensation Report. The achievement against target and the vesting value of the OLTPP for the performance cycle 2013–2015 are shown in a separate table on page 127.

VALUATION PRINCIPLES

For the purpose of the tables contained within this Compensation Report, and 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 2015[1]

		Fixed compensation and pension benefits		Variable compensation					
		Base compensation	Pension benefits	2015 Annual Incentive		LTPP 2015–2017 cycle	LTRPP 2015–2017 cycle	Other	Total compensation
	Currency	Cash (amount)	Amount[2]	Cash (amount)	Equity (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 (CEO)	CHF	2 060 500	175 289	1 545 375	1 545 383	4 121 054	2 060 527	88 432	11 596 560
Steven Baert	CHF	653 333	158 099	543 900	543 953	960 048	256 030	94 716	3 210 079
Felix R. Ehrat	CHF	892 500	153 054	648 875	648 917	1 521 517	447 565	12 669	4 325 097
David Epstein	USD	1 400 000	362 819	1 428 000	1 428 054	2 520 001	1 260 050	569 737	8 968 661
Mark C. Fishman[7]	USD	990 000	248 910	861 300	861 323	1 881 089	891 021	129 825	5 863 468
Richard Francis	CHF	716 667	193 635	599 400	599 424	1 080 054	360 018	954 170	4 503 368
Jeff George	USD	956 539	200 946	158 400	158 404	1 536 056	576 009	1 260 286	4 846 640
Harry Kirsch	CHF	950 000	160 431	757 625	757 628	1 480 074	647 575	51 476	4 804 809
Brian McNamara (until March 1, 2015)[8]	USD	131 154	69 008	115 100	0	58 361	11 751	40 670	426 044
Andrin Oswald (until March 1, 2015)[8]	CHF	138 333	27 634	136 500	0	64 580	13 899	283 236	664 182
André Wyss	CHF	735 000	127 237	0	1 176 053	1 102 513	294 083	83 688	3 518 574
Total[9]	**CHF**	**9 490 269**	**1 843 151**	**6 695 906**	**7 624 994**	**16 094 751**	**6 713 188**	**3 491 962**	**51 954 221**

See next page for 2014 compensation figures

[1] Does not include reimbursement for travel and other necessary business expenses incurred by Executive Committee members in the performance of their services, as these amounts are not considered compensation

[2] Includes service costs of pension and post-retirement healthcare benefits accumulated in 2015, in accordance with IAS19. It also includes an amount of CHF 58 757 for mandatory employer contributions paid by Novartis to governmental social security systems. This amount is out of total employer contributions of CHF 3 457 097, and provides a right to the maximum future insured government pension benefit for the Executive Committee member.

[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 (January 20, 2016). The closing share price on this date was CHF 79.70 per Novartis share and USD 80.49 per ADR.

[4] The amounts shown in these columns represent the underlying share value of the target number of PSUs granted to each Executive Committee member for the performance cycle 2015–2017 based on the closing share price on the grant date (January 21, 2015). The closing share price on this date was CHF 84.75 per Novartis share and USD 98.75 per ADR.

[5] Includes any other perquisites, benefits in kind and international assignment benefits as per global mobility policy (e.g., housing, international health insurance, children's school fees, tax equalization). Tax equalization benefits included for David Epstein, Richard Francis, Jeff George and Andrin Oswald are USD 305 867, CHF 739 086, USD 1 153 361 and CHF 249 728, respectively.

[6] All amounts are before deduction of employee's social security contribution and income tax due by the Executive Committee member

[7] Mark C. Fishman, President NIBR and Executive Committee member, will step down from the Executive Committee on February 29, 2016 and retire from Novartis. He will receive further contractual compensation that includes the base salary, pension and other benefits (pro-rata until February 29, 2016) and the vesting of his incentive awards in accordance with the terms of the Novartis plan rules. As of March 1, 2016, Mark C. Fishman will provide certain consulting services to Novartis for which he will be compensated for a period of up to two years until February 28, 2018. The fees for these services are capped at USD 250 000 p.a. and are in line with those paid to other scientists who provide consultancy services to the NIBR organization.

[8] Brian McNamara (Division Head, Novartis OTC) and Andrin Oswald (Division Head, Novartis Vaccines) transitioned to the GlaxoSmithKline (GSK) group on March 2, 2015 following the completion of the Novartis OTC and Vaccines transactions with GSK. The information disclosed under columns "LTPP" and "LTRPP" in the table above reflects their pro-rata compensation at target. Following their transition to GSK, and in accordance with the applicable plan rules, the LTPP and LTRPP awards for cycle 2015–2017 (as well as for those granted for cycle 2014–2016) will be eligible to vest on the normal vesting date and on a pro-rata basis based on the number of months worked with Novartis during the performance period. The vesting of these awards is subject to performance conditions assessed at the end of the cycle.

[9] Amounts in USD for David Epstein, Mark C. Fishman, Jeff George and Brian McNamara were converted at a rate of CHF 1.00 = USD 1.040, which is the same average exchange rate used in the Group's consolidated financial statements.

EXECUTIVE COMMITTEE MEMBERS COMPENSATION FOR FINANCIAL YEAR 2014[1]

		Fixed compensation and pension benefits		Variable compensation					
		Base compensation	Pension benefits	2014 Annual Incentive		LTPP 2014–2016 cycle	LTRPP 2014–2016 cycle	Other	Total compensation
	Currency	Cash (amount)	Amount[2]	Cash (amount)	Equity (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 (CEO)	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 (from 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]	USD	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	USD	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	USD	990 000	294 572	1 009 800	1 009 818	1 881 034	891 033	78 369	6 154 626
Richard Francis (from 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	USD	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	USD	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 (from 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**

As published in the 2014 Compensation Report

[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 in the course of 2014, the information under the columns "Base compensation", "Pension benefits", "Annual Incentive", "LTPP" and "LTRPP" in the table above reflects their pro-rata compensation over 2014 for the period they were a member of the Executive Committee. The information under the column "Other" includes inter alia their pro-rata compensation from the date they stepped down from the Executive Committee to December 31, 2014. For those who have joined the Executive Committee 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 Executive Committee to December 31, 2014. The information under the "LTPP" and "LTRPP" in the table above reflects their pro-rata compensation at target from the date they joined the Executive Committee 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.

[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 (January 21, 2015).

[4] The amounts shown in these columns represent the underlying share value of the target number of PSUs granted to each Executive Committee member for the performance cycle 2014–2016 based on the closing share price on the grant date (January 22, 2014). The closing share price on this date was CHF 73.75 per Novartis share and USD 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 Corporate 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 that 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 (USD 507 017) following the acquisition of Alcon in 2011.

[9] Richard Francis will receive compensation in the form of 41 500 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. 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 that 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 USD for Kevin Buehler, David Epstein, Mark C. Fishman, Jeff George and Brian McNamara were converted at a rate of CHF 1.00 = USD 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 MEMBERS – EQUITY AWARDS FOR FINANCIAL YEAR 2015 (NUMBER OF EQUITY INSTRUMENTS)[1]

	Variable compensation		
	2015 Annual Incentive	LTPP 2015–2017 cycle	LTRPP 2015–2017 cycle
	Equity (number)[2]	PSUs (target number)[3]	PSUs (target number)[3]
Joseph Jimenez	19 390	48 626	24 313
Steven Baert	6 825	11 328	3 021
Felix R. Ehrat	8 142	17 953	5 281
David Epstein	17 742	25 519	12 760
Mark C. Fishman	10 701	19 049	9 023
Richard Francis	7 521	12 744	4 248
Jeff George	1 968	15 555	5 833
Harry Kirsch	9 506	17 464	7 641
Brian McNamara (until March 1, 2015)[4]	0	591	119
Andrin Oswald (until March 1, 2015)[4]	0	762	164
André Wyss	14 756	13 009	3 470
Total	**96 551**	**182 600**	**75 873**

See table below for 2014 compensation figures

[1] The value of the awards included in this table are reported in the table "EXECUTIVE COMMITTEE MEMBER COMPENSATION FOR FINANCIAL YEAR 2015" on page 122.

[2] Vested shares, restricted shares and/or RSUs granted under the Annual Incentive for performance year 2015

[3] Target number of PSUs granted under the LTPP and LTRPP as applicable for the 2015–2017 performance cycle

[4] Target number of PSUs granted under the LTPP and LTRPP are reported on a pro-rata basis. See footnote 8 of the table "EXECUTIVE COMMITTEE MEMBER COMPENSATION FOR FINANCIAL YEAR 2015" on page 122.

EXECUTIVE COMMITTEE MEMBERS – EQUITY AWARDS FOR PERFORMANCE YEAR 2014 (NUMBER OF EQUITY INSTRUMENTS)[1]

	Variable compensation			
	2014 Annual Incentive	LTPP 2014–2016 cycle	LTRPP 2014–2016 cycle	Other
	Equity (number)[2]	Target PSUs (number)[3]	Target PSUs (number)[3]	Equity/ Target PSUs (number)
Joseph Jimenez	23 706	55 878	27 939	0
Steven Baert (from 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 (from 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 (from May 1, 2014)	8 687	12 678	3 381	0
Total	**117 147**	**257 591**	**92 347**	**104 389**

As published in the 2014 Compensation Report

[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 left or joined the Committee in the course of 2014.

[2] Vested shares, restricted shares and/or RSUs granted under the Annual Incentive for performance year 2014

[3] Target number of 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, and 8 802 target PSUs under the 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 2015[1]

	Base salary	Variable compensation[2]
Joseph Jimenez	18.2%	81.8%
Steven Baert	22.1%	77.9%
Felix R. Ehrat	21.5%	78.5%
David Epstein	17.4%	82.6%
Mark C. Fishman	18.1%	81.9%
Richard Francis	21.4%	78.6%
Jeff George	28.3%	71.7%
Harry Kirsch	20.7%	79.3%
André Wyss	22.2%	77.8%
Total	**20.1%**	**79.9%**

[1] Excludes pension and other benefits, as well as Brian McNamara and Andrin Oswald, who stepped down from the Executive Committee on March 1, 2015 as a result of the GlaxoSmithKline transaction.
[2] See the table "EXECUTIVE COMMITTEE MEMBER COMPENSATION FOR FINANCIAL YEAR 2015" on page 122 with regard to the disclosure principles of variable compensation.

LOANS TO EXECUTIVE COMMITTEE MEMBERS

No loans were granted to current or former Executive Committee members or to "persons closely linked" to them in 2015. No such loans were outstanding as of December 31, 2015.

OTHER PAYMENTS TO EXECUTIVE COMMITTEE MEMBERS

During 2015, no other payments (or waivers of claims) were made to Executive Committee members or to "persons closely linked" to them.

PAYMENTS TO FORMER EXECUTIVE COMMITTEE MEMBERS

During 2015, under the former Executive Committee members' contracts and in line with the company's plan rules and policies, payments were made to Kevin Buehler, the former Division Head of Alcon, and George Gunn, the former Division Head of Animal Health, who retired from the company on May 1, 2015 and on August 1, 2015, respectively. In 2015, an amount of USD 1 127 324 and CHF 1 214 583 was paid to Mr. Buehler and Mr. Gunn, respectively. These amounts exclude the value of the vested OLTPP awards for cycle 2013–2015 of Mr. Buehler and Mr. Gunn, who received, in accordance with the plan rules, USD 1 763 889 and CHF 1 527 285 (value of the shares delivered at vesting), respectively. In addition, in line with their contracts and the company's policies, a total amount of CHF 24 116 was paid by the company for tax and financial services provided to two other former Executive Committee members. With the exception of the above amounts, during 2015, no other payments (or waivers of claims) were made to former Executive Committee members or to "persons closely linked."

JAMES E. BRADNER, FUTURE PRESIDENT OF NIBR AND EXECUTIVE COMMITTEE MEMBER

As announced on September 24, 2015, James E. Bradner will succeed Mark Fishman as President of the Novartis Institutes for BioMedical Research (NIBR) and become an Executive Committee member with effect from March 1, 2016. Prior to joining Novartis, Dr. Bradner served as a board member and advisor to many scientific companies he founded, and as a supervisory board member of another company. In reaching the terms of the offer for Dr. Bradner, the Board of Directors recognized the need to make up for compensation that Dr. Bradner would be forfeiting on joining Novartis. In extending our offer to Dr. Bradner, the following compensation for lost entitlements was agreed to attract him to Novartis:

- In January 2016, as compensation for lost entitlements at one of his scientific companies on joining Novartis, Dr. Bradner has been paid an amount of USD 844 250 for the 275 000 shares that he forfeited. The fair market value of the forfeited shares was determined by an independent valuation expert.
- In January 2016, Dr. Bradner received compensation in the form of 3 607 RSUs for lost entitlements in connection with his supervisory board mandate with a total value at grant of USD 309 300. The vesting of the RSUs will be staggered based on the original vesting period of the forfeited entitlements, provided that he remains employed with Novartis at the respective due dates.

Please also see the additional related disclosure made in Note 27 to the Group's audited consolidated financial statements (page 226). These disclosures are made on a voluntary basis and will be further communicated in next year's Annual Report.

AWARD AND DELIVERY OF EQUITY TO NOVARTIS ASSOCIATES

During 2015, 12.4 million unvested restricted shares (or ADRs), RSUs and target PSUs were granted and 14.4 million Novartis shares (or ADRs) were delivered to Novartis associates under various equity-based participation plans. Current unvested equity instruments (restricted shares, RSUs and target PSUs) as well as outstanding equity options held by associates represent 2.4% of shares issued of Novartis. Novartis delivers treasury shares to associates to fulfill these obligations and aims to offset the dilutive impact from its equity-based participation plans.

SHARE OWNERSHIP REQUIREMENTS FOR EXECUTIVE COMMITTEE MEMBERS

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.

CEO	5 x base compensation
Executive Committee members	3 x 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 granted under the Leveraged Share Savings Plan (LSSP) and the Employee Share Ownership Plan (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" to them. The Compensation Committee reviews compliance with the share ownership guideline on an annual basis.

As of December 31, 2015, all members who have served at least three years on the Executive Committee have met or exceeded their personal Novartis share ownership requirements.

As of January 1, 2016, to better align with prevalent market practice and the change to our compensation system, Executive Committee members will be required to meet their share ownership requirement within five years of hire/promotion.

SHARES, ADRs, EQUITY RIGHTS AND SHARE OPTIONS OWNED BY EXECUTIVE COMMITTEE MEMBERS

The following tables show the total number of shares, ADRs, other equity rights and share options owned by Executive Committee members and "persons closely linked" to them as of December 31, 2015.

As of December 31, 2015, no Executive Committee members 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, 2015
Joseph Jimenez	284 405	322 200	606 605
Steven Baert	1 700	44 977	46 677
Felix R. Ehrat	92 435	107 870	200 305
David Epstein	70 371	230 535 [3]	300 906
Mark C. Fishman	52 242	276 622 [3]	328 864
Richard Francis	14 357	37 722	52 079
Jeff George	119 247	99 373	218 620
Harry Kirsch	46 579	100 359	146 938
André Wyss	44 660	79 917	124 577
Total [4]	**725 996**	**1 299 575**	**2 025 571**

[1] Includes holdings of "persons closely linked" to Executive Committee members (see definition further below on this page)
[2] Includes restricted shares, RSUs and target number of PSUs. Matching shares under the ESOP, 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] As a result of the GlaxoSmithKline transaction, Brian McNamara and Andrin Oswald stepped down from the Executive Committee on March 1, 2015. Brian McNamara owned 52 251 vested shares and 15 200 unvested shares and other equity rights at March 1, 2015. Andrin Oswald owned 122 892 vested shares and 41 547 unvested shares and other equity rights at March 1, 2015.

SHARE OPTIONS OWNED BY EXECUTIVE COMMITTEE MEMBERS [1]

	Number of share options [2]		
	2011	Other	Total at December 31, 2015
Jeff George	141 396	0	141 396
André Wyss	0	378 390	378 390
Total [3]	**141 396**	**378 390**	**519 786**

[1] The last share option grants under the Novartis Equity Plan Select were made 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, and to share options bought on the market by the Executive Committee members or "persons closely linked" to them (see definition further below on this page).
[3] No other current Executive Committee members owned share options at December 31, 2015. As a result of the GlaxoSmithKline transaction, Brian McNamara and Andrin Oswald stepped down from the Executive Committee on March 1, 2015. At March 1, 2015, Brian McNamara and Andrin Oswald did not own any share options.

PERSONS CLOSELY LINKED

"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.

PERFORMANCE VESTING OF OLD LONG-TERM PERFORMANCE PLAN (2013–2015)

Overview

As of 2014, grants are no longer made under this plan to Executive Committee members, but performance for the last cycle of the OLTPP is reported in this Compensation Report. The performance for the first cycle of the LTPP and LTRPP (cycle 2014–2016) will be reported in the 2016 Compensation Report.

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. The formula is included on page 166 of the Financial Report.

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 US, awards may also have been delivered in cash under the US-deferred compensation plan.

OUTCOME OF THE PERFORMANCE CYCLE 2013–2015

Over the three-year performance period, 2013 to 2015, Novartis performed 3.5% ahead of the USD 7.4 billion NVA target, corresponding to a payout of 118% following the application of the 1:5 payout curve. This achievement was mainly driven by operating income performance and productivity initiatives. In arriving at the NVA performance score, the Compensation Committee excluded, as major items, 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 USD 1.1 billion related to the divestment of the Vaccines influenza business). Over the entire three-year cycle, currency movements had a significant negative impact (more than USD 2.1 billion) in NVA well above the impact on the previous cycle of the OLTPP. Considering the total shareholder return of the three years (in USD, +53.4%), the Compensation Committee decided to exclude, on a discretionary basis, a portion of this currency impact.

The table below shows the vesting of the OLTPP 2013–2015 cycle for the CEO and other Executive Committee members.

PAYOUT SCHEDULE FOR OLTPP 2013–2015 PERFORMANCE CYCLE [1]

	Currency	PSUs (target value at grant date)	PSUs (target number)	Performance factor payout for OLTPP 2013–2015 cycle	Shares delivered at vesting (number)	Shares delivered at vesting (value at vesting price)
Joseph Jimenez	CHF	3 605 933	58 443	118%	68 963	5 496 351
Other 8 members of the Executive Committee [2]	CHF	5 363 227	86 864	118%	102 500	8 214 409
Total	**CHF**	**8 969 160**	**145 307**	**118%**	**171 463**	**13 710 760**

See next page for 2014 compensation figures

[1] For those who have left or joined the Executive Committee in the course of the 2013–2015 performance period, the information disclosed under this table reflects the pro-rata OLTPP 2013–2015 payout attributable to the period they were a member of the Executive Committee.

[2] This table excludes the awards which were originally granted to Brian McNamara (10 780 target PSUs) and Andrin Oswald (13 688 target PSUs) for OLTPP 2013–2015 performance cycle. As a result of the GlaxoSmithKline transaction, and in accordance with the OLTPP plan rules, these awards were forfeited.

For the Executive Committee members, including the CEO, the impact of the share price appreciation over the vesting period on the total value realized at vesting was CHF 3.1 million. For the CEO, the impact of the share price appreciation was CHF 1.4 million. This represents 25% of the overall vesting value.

For comparative purposes, the table below shows the vesting of the OLTPP 2012–2014 cycle for the CEO and other Executive Committee members, as published in the 2014 Compensation Report.

PAYOUT SCHEDULE FOR OLTPP 2012–2014 PERFORMANCE CYCLE[1]

	Currency	PSUs (target value at grant date)	PSUs (target number)	Performance factor payout for OLTPP 2012–2014 cycle	Shares delivered at vesting (number)	Shares delivered at vesting (value at vesting 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**

As published in the 2014 Compensation Report

[1] For those who left or joined the Executive Committee in the course of the 2012–2014 performance period, the information disclosed under this table reflects the pro-rata OLTPP 2012–2014 payout attributable to the period they were a member of the Executive Committee.

For the Executive Committee members, including the CEO, the impact of the share price appreciation over the vesting period of the OLTPP 2012–2014 cycle on the total value realized at vesting was CHF 10.9 million. For the CEO, the impact of the share price appreciation was CHF 3.4 million. This represents 36% of the overall vesting value.

2015 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. Board members do not receive variable compensation, underscoring their focus on corporate strategy, supervision and governance.

The Board of Directors 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 compensation of Board and Executive Committee members related to the Ordinance Against Excessive Compensation in Stock Exchange Listed Companies) and under US law (due to the company's 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 OF DIRECTORS

As Chairman, Dr. Joerg 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

From the 2015 Annual General Meeting (AGM), Dr. Reinhardt voluntarily waived the company contribution for pension and insurance benefits. Until this date, 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 24 840.

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 2014 and 2013 Compensation Reports. 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, 2015, he received EUR 871 251 in cash.[1]

[1] On January 31, 2016, he will receive the third and final installment of EUR 1 045 800.

For 2015, 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 2015). For the year 2016, the Chairman will also voluntarily waive this increase.

COMPENSATION OF THE OTHER BOARD MEMBERS

The annual fee rates for Board membership and additional functions are included in the table below. These were approved by the Board of Directors with effect from the 2014 AGM and align our aggregate Board compensation to the current levels of other large Swiss companies.

2015 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 — Research & Development Committee[2] — Risk Committee	60 000
Membership of Audit and Compliance Committee	60 000
Membership of the following committees: — Compensation Committee — Governance, Nomination and Corporate Responsibilities Committee — Research & Development Committee — Risk Committee	30 000

[1] The Chairman also received company pension contributions until the 2015 AGM (when they ceased), and payment for loss of other entitlements at his previous employer for total EUR 2 665 051 staggered over 2014 to 2016.
[2] The Chairman receives no additional committee fees for chairing the Research & Development Committee.

In addition, the following policies apply 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 12 months after the AGM.
— Board members bear the full cost of their employee social security contributions, if any, and do not receive share options or pension benefits.

The Board compensation system will remain unchanged in 2016.

2015 BOARD COMPENSATION

BOARD MEMBER COMPENSATION TABLE (AUDITED)

The following table discloses the 2015 Board member compensation. Board compensation is reported as the amount earned in the financial year.

BOARD MEMBER COMPENSATION EARNED FOR FINANCIAL YEAR 2015[1]

	Board membership	Vice Chairman	Audit and Compliance Committee	Compensation Committee	Governance, Nomination and Corporate Responsibilities Committee	Research & Development Committee	Risk Committee	Cash (CHF) (A)	Shares (CHF) (B)	Shares (number)[2]	Other (CHF) (C)[3]	Total (CHF) (A)+(B)+(C)[4]
Joerg Reinhardt[5]	Chair					Chair		1 900 000	1 900 000	19 397	29 197	3 829 197
Ulrich Lehner (until February 26, 2015)	•	•	•	•	•			39 167	39 167	1 242	582	78 916
Enrico Vanni	•	•	•	Chair		•		250 000	250 000	2 552	4 357	504 357
Nancy Andrews (from February 27, 2015)	•					•		137 500	137 500	812	–	275 000
Dimitri Azar	•		•			•		172 250	217 750	2 712	–	390 000
Verena A. Briner	•						•	165 000	165 000	1 684	4 357	334 357
Srikant Datar	•		Chair	•			•	240 000	240 000	2 450	–	480 000
Ann Fudge	•			•	•		•	195 000	195 000	1 990	–	390 000
Pierre Landolt[6]	•				Chair			–	360 000	3 674	3 492	363 492
Charles L. Sawyers	•				•[7]	•		177 500	177 500	1 757	–	355 000
Andreas von Planta	•		•		•		Chair	225 000	225 000	2 296	4 357	454 357
William T. Winters	•			•[7]				–	325 000	3 210	–	325 000
Total								**3 501 417**	**4 231 917**	**43 776**	**46 342**	**7 779 676**

See next page for 2014 compensation figures

[1] Does not include reimbursement for travel and other necessary business expenses incurred by Board members in the performance of their services, as these are not considered compensation

[2] Represents the gross number of shares delivered to each Board member in 2015. The number of shares reported in this column represents: (i) the second and final equity installment delivered in February 2015 for the services from the 2014 AGM to the 2015 AGM, and (ii) the first of two equity installment delivered in August 2015 for the services from the 2015 AGM to the 2016 AGM. The second and final equity installment for the services from the 2015 AGM to the 2016 AGM will take place in February 2016.

[3] It includes an amount of CHF 21 502 for mandatory employer contributions paid by Novartis to Swiss governmental social security systems. This amount is out of total employer contributions of CHF 429 806, and provides a right to the maximum future insured government pension benefit for the Board member.

[4] All amounts are before deduction of employee's social security contribution and income tax due by the Board member

[5] Does not include EUR 871 251 paid to Joerg Reinhardt on January 31, 2015 for lost entitlements at his former employer. This amount is the second of three installments 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 third and last installment of EUR 1 045 800 will be delivered on January 31, 2016, provided that he remains in office as our Chairman at the due dates. The lost entitlements of EUR 2 665 051 of Joerg Reinhardt were included in full in the 2013 Board compensation table on page 124 of the 2014 Compensation Report based on our disclosure policy to report compensation for lost entitlements in full in the year the member of the Board or Executive Committee joined Novartis.

[6] According to Pierre Landolt, the Sandoz Family Foundation is the economic beneficiary of the compensation.

[7] From February 27, 2015

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 & 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[9]	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**

As published in the 2014 Compensation Report

[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 installments for the services from the 2014 AGM to the 2015 AGM. The second equity installment 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.

[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 installments 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 on page 124 of the 2014 Compensation Report 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 APPROVED BY SHAREHOLDERS AT THE AGM

(CHF)	Compensation earned during the financial year (A)[1]	Compensation earned for the period from January 1 to AGM (2 months) of the financial year (B)	Compensation to be earned for the period from January 1 to the AGM (2 months) in the year following the financial year (C)	Total compensation earned from AGM to AGM (A)-(B)+(C)	Amount approved/ endorsed by shareholders at the respective AGM	Amount within the amount approved/ endorsed by shareholders at the AGM
	2015	January 1, 2015 to 2015 AGM	January 1, 2016 to 2016 AGM[2]	2015 AGM to 2016 AGM	2015 AGM	2015 AGM
Joerg Reinhardt	3 829 197	(658 174)	633 334	3 804 357	3 805 000	Yes
Other Board members	3 950 479	(667 250)	653 334	3 936 563	3 940 000	Yes
Total	**7 779 676**	**(1 325 424)**	**1 286 668**	**7 740 920**	**7 745 000**	**Yes**
	2014	January 1, 2014 to 2014 AGM[3]	January 1, 2015 to 2015 AGM	2014 AGM to 2015 AGM	2014 AGM	2014 AGM
Joerg Reinhardt	3 957 844	(670 497)	658 174	3 945 521	3 962 000	Yes
Other Board members	4 807 220	(1 446 909)[4]	667 250	4 027 561	4 060 000	Yes
Total	**8 765 064**	**(2 117 406)**	**1 325 424**	**7 973 082**	**8 022 000**	**Yes**

[1] See previous pages for 2015 and 2014 Board member compensation.
[2] To be confirmed and reported in the 2016 Compensation Report.
[3] Includes an amount of CHF 27 771 for mandatory employer social security contributions paid by Novartis to Swiss governmental social security systems. This amount is out of total employer contributions of CHF 359 890, and provides a right to the maximum future insured government pension benefit for the Board member.
[4] Delegated Board membership fees earned after the 2014 AGM by William Brody and Rolf M. Zinkernagel are included in this amount.

LOANS TO BOARD MEMBERS

No loans were granted to current or former members of the Board of Directors or to "persons closely linked" to them during 2015. No such loans were outstanding as of December 31, 2015.

OTHER PAYMENTS TO BOARD MEMBERS

During 2015, no payments (or waivers of claims) other than those set out in the Board member compensation table (including its footnotes) on page 130 were made to current members of the Board of Directors or to "persons closely linked" to them.

SHARE OWNERSHIP REQUIREMENTS FOR BOARD MEMBERS

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 of Directors. As of December 31, 2015, 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 BOARD MEMBERS

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, 2015 is shown in the table below.

As of December 31, 2015, no members 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 members of the Board of Directors held any share options.

SHARES AND ADRS OWNED BY BOARD MEMBERS[1]

	Number of shares[2] At December 31, 2015
Joerg Reinhardt	480 404
Enrico Vanni	15 566
Nancy Andrews	609
Dimitri Azar	9 292
Verena A. Briner	6 429
Srikant Datar	32 629
Ann Fudge	15 605
Pierre Landolt[3]	54 866
Charles L. Sawyers	4 252
Andreas von Planta	124 868
William T. Winters	5 998
Total[4]	**750 518**

[1] Includes holdings of "persons closely linked" to Board members (see definition on page 126)
[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] Ulrich Lehner stepped down from the Board of Directors on February 26, 2015. At February 26, 2015, Ulrich Lehner owned 37 263 shares.

PAYMENTS TO FORMER BOARD MEMBERS

During 2015, no payments (or waivers of claims) were made to former Board members or to "persons closely linked" to them, except for the following amounts:

— Prof. Dr. William R. Brody and Prof. Dr. Rolf M. Zinkernagel, who stepped down from the Board of Directors at the 2014 AGM, received delegated Board membership fees for their work on the Boards of the Novartis Institute for Tropical Diseases (Prof. Dr. Zinkernagel) and the

Genomics Institute of the Novartis Research Foundation (Prof. Dr. Brody and Prof. Dr. Zinkernagel). During 2015, an amount of CHF 100 000 and CHF 200 000 was paid to Prof. Dr. Brody and Prof. Dr. Zinkernagel, respectively, for their work on these Boards. Their mandate on the Board of the Genomics Institute of the Novartis Research Foundation ended as of November 19, 2015. The company is appreciative of their many years of service on this Board.

— The payments reported in Note 27 to the Group's audited consolidated financial statements (page 226)

NOTE 27 TO THE GROUP'S AUDITED CONSOLIDATED FINANCIAL STATEMENTS

The total expense for the year for the compensation awarded to Board and Executive Committee members using IFRS measurement rules is presented in the Financial Report in Note 27 to the Group's audited consolidated financial statements.

COMPENSATION GOVERNANCE

LEGAL FRAMEWORK

The Swiss Code of Obligations and the Corporate Governance Guidelines of the SIX Swiss Exchange require listed companies to disclose certain information about the compensation of Board and Executive Committee members, their equity participation in the Group, and 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 is 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.

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 of Directors. A summary of the compensation decision-making authorities is set out below:

COMPENSATION AUTHORIZATION LEVELS WITHIN THE PARAMETERS SET BY THE SHAREHOLDERS' MEETING

Decision on	Authority
Compensation of Chairman and other Board members	Board of Directors
Compensation of CEO	Board of Directors
Compensation of 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 2015 AGM, the Compensation Committee had the following four members: Ann Fudge, Enrico Vanni, Srikant Datar and William Winters. Enrico Vanni has served as Chair since 2012. Ulrich Lehner did not stand for re-election to the Board of Directors 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 2015. The advisor was hired directly by the Compensation Committee in 2011, and the Compensation 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 2015

In 2015, the Compensation Committee held five formal meetings. The Compensation Committee conducted a performance self-evaluation in 2015 and 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 by Board and Executive Committee members

Executive Committee employment contracts provide for a notice period of up to 12 months and contain no change-of-control clauses or severance provisions (e.g., 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).

MALUS AND CLAWBACK

Any incentive compensation paid to Executive Committee members is subject to “malus” and “clawback” rules. This means that the Board of Directors for the CEO, or the Compensation Committee for other Executive Committee members, may decide, subject to applicable law, 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.

Report of the Statutory Auditor on the Compensation Report of Novartis AG

TO THE GENERAL MEETING OF NOVARTIS AG, BASEL

We have audited the Executive Committee Compensation Tables pages 121–126 and the 2015 Board Compensation pages 130–133 of the accompanying Compensation Report of Novartis AG for the year ended December 31, 2015.

BOARD OF DIRECTORS' RESPONSIBILITY

The Board of Directors is responsible for the preparation and overall fair presentation of the Compensation Report in accordance with Swiss law and the Ordinance against Excessive Compensation in Stock Exchange Listed Companies (Ordinance). The Board of Directors is also responsible for designing the compensation system and defining individual compensation packages.

AUDITOR'S RESPONSIBILITY

Our responsibility is to express an opinion on the accompanying Compensation Report. We conducted our audit in accordance with Swiss Auditing Standards. These standards require that we comply with ethical requirements, and plan and perform the audit to obtain reasonable assurance about whether the Compensation Report complies with Swiss law and articles 14–16 of the Ordinance.

An audit involves performing procedures to obtain audit evidence on the disclosures made in the Compensation Report with regard to compensation, loans and credits in accordance with articles 14–16 of the Ordinance. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatements in the Compensation Report, whether due to fraud or error. This audit also includes evaluating the reasonableness of the methods applied to value components of compensation, as well as assessing the overall presentation of the Compensation Report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

OPINION

In our opinion, the Compensation Report of Novartis AG for the year ended December 31, 2015 complies with Swiss law and articles 14–16 of the Ordinance.

PricewaterhouseCoopers AG

Bruno Rossi
Audit expert
Auditor in charge

Stephen Johnson
Global relationship partner

Basel, January 26, 2016

1 A rice farmer tills a paddy field with his water buffalo. Rice is the staple crop here.
2 Dr. Cu Ahong, director of the Mù Cang Chai Preventative Health Centre, examines 8-year-old Mu Thi Cha, who complains of abdominal pain.
3 Gian Cho De has hypertension. The rise of chronic disease in Vietnam is an additional burden for the healthcare system.
4 Despite the availability of modern medicine, many people in Vietnam still use herbal remedies, such as these seen on sale in Hanoi.

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The Healthy Family initiative, launched in 2012, is run by Novartis and involves doctors working at community health centers to improve education, and expand access to treatment and health screenings

→ CONTINUED FROM PAGE 109

Dr. Xinh grew up in Mù Cang Chai, so he understands local traditions and speaks the local dialect, enabling him to communicate easily with patients, understand their ailments, and treat them. The H'mong people have numerous health problems, some linked to traditional beliefs and lifestyles. For instance, it is still common among the H'mong to use open fires to cook and heat their houses, and the indoor air pollution has led to widespread respiratory ailments.

Giang Giua Cua, 77, is a typical patient seen by Dr. Xinh. He has chronic obstructive pulmonary disease after many years of inhaling smoke at home. Because he is short of breath, Mr. Cua is no longer capable of trekking to the community hospital, so the doctor must come to him.

Respiratory illness is just one of the chronic diseases that are on the rise in Vietnam, just as they are elsewhere in the world. For instance, cases of diabetes have tripled in Vietnam over the past decade, according to the World Health Organization. Hypertension is also on the rise. These and other chronic ailments, which can require ongoing treatment for years or even decades, are adding significantly to the existing burden felt by healthcare providers.

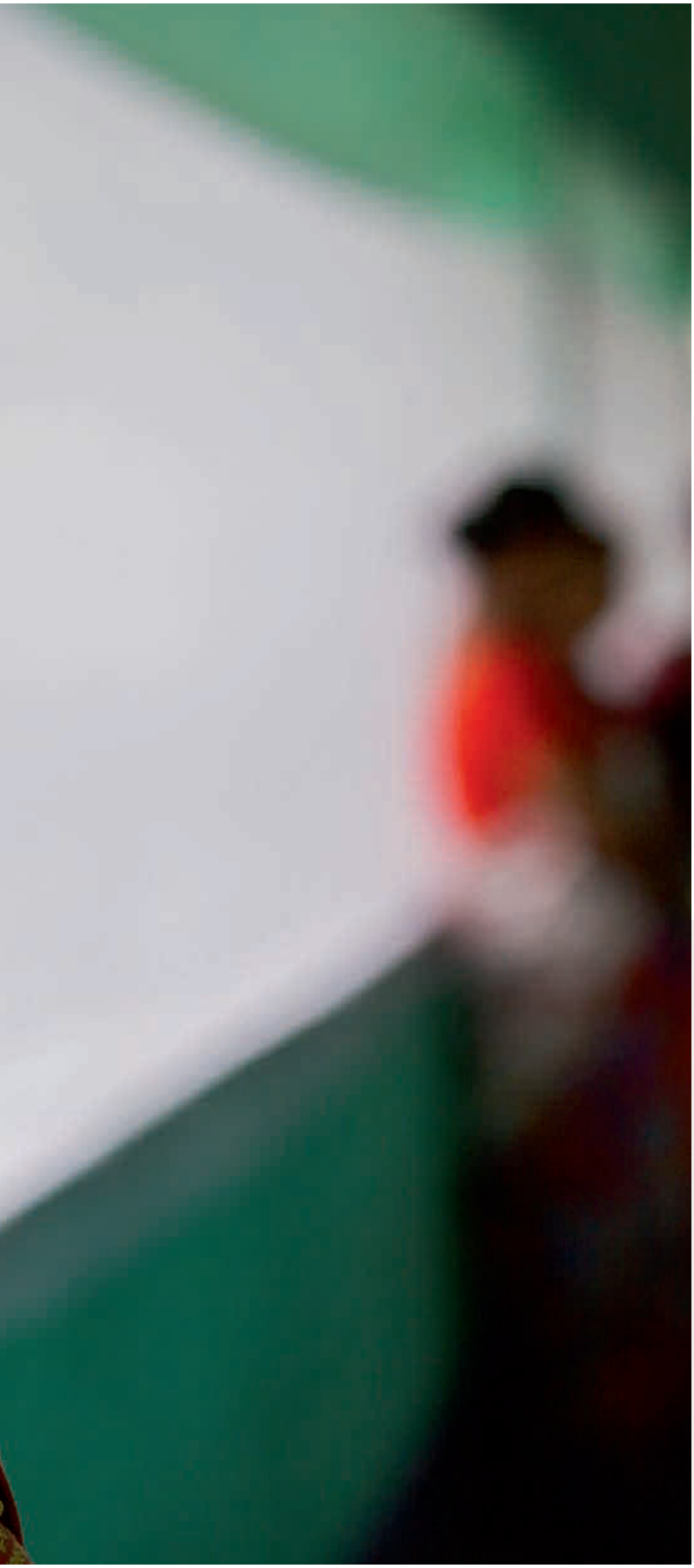
Efforts to improve public health in the region have been complicated by locals' reliance on traditional medicines, as well as their reluctance to seek medical attention. And the need for more healthcare professionals remains acute, says Dr. Cu Ahong, director of the Mù Cang Chai community hospital.

But the situation is changing. Mù Cang Chai will eventually benefit from a program begun in 2013 by the Ministry of Health to increase the number of rural doctors. And efforts are underway to reinforce health education and healthcare delivery in rural Vietnam. One initiative is Healthy Family, or Cung Song Khoe in Vietnamese, run by Novartis in collaboration with the Vietnamese government. This social venture was launched in 2012 and involves doctors working at community health centers to improve education, and expand access to treatment and health screenings.

In Mù Cang Chai, for instance, doctors are making strides in the area of disease prevention. Community clinics run patient-education classes to inform people about the risk of developing chronic illnesses such as diabetes and hypertension. And they offer diagnostic tests, uncovering problems before they become acute.

Such progress gives Dr. Ahong hope. He believes that education will help people adopt healthier lifestyles. And he looks forward to the arrival of more medical personnel to reinforce the efforts that he and Dr. Xinh are making.

FINANCIAL REPORT



CONTENTS

PHOTO ESSAY

Making clear vision a personal mission

For many working people, the weekend is a time to relax and unwind, but for Indian eye surgeons Janak and Preeti Shah, it offers the chance to help a group of patients who desperately need their skills.

Once or twice a month, the couple leaves their busy practice in Mumbai and travels to remote areas of rural India to perform surgery free of charge on people who would otherwise have no chance of treatment for a range of debilitating eye conditions such as glaucoma and cataracts.

→ CONTINUED ON PAGE 256

OPERATING AND FINANCIAL REVIEW 2015

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 International Financial Reporting Standards (IFRS) as published by the International Accounting Standards Board, and with the sections on Performance and Innovation on pages 24 to 59 of this Annual Report.

Following the announcement of our portfolio transformation transactions completed during 2015, in which we agreed to divest our Vaccines, OTC and Animal Health businesses, Novartis reported the Group's results for the current and prior years as "continuing operations" and "discontinued operations".

Unless otherwise noted, the comments in this Operating and Financial Review refer to continuing operations, which includes the businesses of Pharmaceuticals, Alcon and Sandoz Divisions, Corporate activities and, starting on March 2, 2015, the results from the new oncology assets acquired from GSK and the 36.5% interest in the GSK Consumer Healthcare joint venture (the latter reported as investment in associated companies). We also provide information on discontinued operations and total Group performance. For further details on continuing and discontinued operations see pages 145 and 147 and Note 30 to the Group Consolidated Financial Statements.

OPPORTUNITY AND RISK SUMMARY

Our financial results are affected to varying degrees by external factors. The aging of the global population and rising rates of chronic diseases are driving demand for healthcare worldwide, as well as for treatments that Novartis provides. Continued growth in healthcare spending is contributing to increased scrutiny on drug pricing by governments, media and consumers, but also to increased demand for lower-cost treatment options, such as those produced by our generics division, Sandoz. Advances in science and technology are opening new opportunities to develop treatments tailored for individual patients.

At the same time, the loss of market exclusivity and the introduction of branded and generic competitors could significantly erode sales of our innovative products. Heightened regulatory requirements and the inherent complexity of our industry could lead to difficulties in bringing products to market, while increased pressure on pricing could impact our ability to generate returns and invest for the future. The growing 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 could impact our results, see details starting on page 162.

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 and constant currency 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, impairment charges, expenses relating to divestments, the integration of acquisitions, restructuring charges that exceed a threshold of USD 25 million, as well as other income and expense items that management deems exceptional and that are or are expected to accumulate within the year to be over a USD 25 million threshold. A reconciliation between IFRS results and core results is shown on pages 167-169.

We present information about our net sales and other key figures relating to operating and net income in constant currencies (cc). We calculate constant currency net sales and operating income 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.

The core results, constant currencies and other non-IFRS measures are explained in more detail starting on page 165 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.

GROUP OVERVIEW

Novartis delivered solid financial performance in 2015, driven by our continued success with growth products and expansion in emerging growth markets, which helped offset the effects of generic competition of approximately USD 2.2 billion. As a result, we achieved net sales to third parties from continuing operations of USD 49.4 billion (–5%, +5% cc). Growth in constant currencies has been more than offset by negative currency impacts driven by the strengthening of the US dollar versus the euro, Japanese yen and major emerging market currencies.

Operating income decreased by 2% in constant currencies to USD 9.0 billion (–19%, –2% cc), mainly due to the amortization of the new oncology assets in Pharmaceuticals. In addition, an exceptional expense of USD 400 million for a settlement of the specialty pharmacies case in the Southern District of New York was recorded in 2015, whereas the prior-year benefitted from a one-time commercial settlement gain of USD 302 million and USD 248 million gain from selling a Novartis Venture Fund investment. Operating income margin was 18.2 percent of net sales.

Net income from continuing operations was USD 7.0 billion, declining more than operating income (–34%, –18% cc) mainly due to higher financial expense driven by USD 0.4 billion exceptional charges related to Venezuela and lower income from associated companies, which included in the prior year a gain of USD 0.8 billion from the sale of the shares of Idenix Pharmaceuticals, Inc., US (Idenix) to Merck & Co., US, and a gain of USD 0.4 billion from the divestment of the shareholding in LTS Lohmann Therapie-Systeme AG, Germany (LTS).

Basic earnings per share from continuing operations decreased 33% (–17% cc) to USD 2.92, declining less than net income from continuing operations due to the lower number of average outstanding shares.

Free Cash Flow from continuing operations decreased 15% to USD 9.3 billion, primarily due to negative currency impact on operations.

Net income from discontinued operations amounted to USD 10.8 billion in 2015, which included USD 12.7 billion of pre-tax divestment gains and the operational results of the divested businesses until the respective dates of completion of the transactions, compared to a net loss of USD 447 million in 2014. For more information on discontinued operations please see pages 145 and 147 and Note 30 of the Novartis Group consolidated financial statements.

For the total Group, net income amounted to USD 17.8 billion in 2015 compared to USD 10.3 billion in 2014, impacted by the exceptional divestment gains included in net income from the discontinued operations. Basic earnings per share increased to USD 7.40 from USD 4.21 in the prior year and free cash flow for the total Group amounted to USD 9.0 billion.

KEY FIGURES

	Year ended Dec 31, 2015 USD millions	Year ended Dec 31, 2014 USD millions	Change in USD %	Change in constant currencies %
Net sales to third parties from continuing operations	**49 414**	**52 180**	**– 5**	**5**
Sales to discontinued operations	26	239	– 89	– 88
Net sales from continuing operations	**49 440**	**52 419**	**– 6**	**4**
Other revenues	947	1 215	– 22	– 22
Cost of goods sold	– 17 404	– 17 345	0	– 8
Gross profit from continuing operations	**32 983**	**36 289**	**– 9**	**2**
Marketing & Sales	– 11 772	– 12 377	5	– 5
Research & Development	– 8 935	– 9 086	2	– 3
General & Administration	– 2 475	– 2 616	5	– 1
Other income	2 049	1 391	47	55
Other expense	– 2 873	– 2 512	– 14	– 24
Operating income from continuing operations	**8 977**	**11 089**	**– 19**	**– 2**
Return on net sales (%)	18.2	21.3		
Income from associated companies	266	1 918	– 86	– 86
Interest expense	– 655	– 704	7	2
Other financial income and expense	– 454	– 31	nm	nm
Income before taxes from continuing operations	**8 134**	**12 272**	**– 34**	**– 17**
Taxes	– 1 106	– 1 545	28	10
Net income from continuing operations	**7 028**	**10 727**	**– 34**	**– 18**
Net income/loss from discontinued operations	10 766	– 447	nm	nm
Net income	**17 794**	**10 280**	**73**	**91**
Attributable to:				
Shareholders of Novartis AG	*17 783*	*10 210*	*74*	*92*
Non-controlling interests	*11*	*70*	*– 84*	*– 84*
Basic earnings per share (USD) from continuing operations	**2.92**	**4.39**	**– 33**	**– 17**
Basic earnings per share (USD) from discontinued operations	4.48	– 0.18	nm	nm
Total basic earnings per share (USD)	**7.40**	**4.21**	**76**	**94**
Free cash flow from continuing operations	**9 259**	**10 934**	**– 15**	
Free cash flow	**9 029**	**10 762**	**– 16**	

nm = not meaningful

NET SALES BY SEGMENT

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

	Year ended Dec 31, 2015 USD millions	Year ended Dec 31, 2014 USD millions	Change in USD %	Change in constant currencies %
Pharmaceuticals	30 445	31 791	– 4	6
Alcon	9 812	10 827	– 9	– 1
Sandoz	9 157	9 562	– 4	7
Net sales to third parties from continuing operations	**49 414**	**52 180**	**– 5**	**5**

Additional comments on the changes in the net sales by division can be found starting on page 34.

OPERATING INCOME FROM CONTINUING OPERATIONS

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

	Year ended Dec 31, 2015 USD millions	% of net sales	Year ended Dec 31, 2014 USD millions	% of net sales	Change in USD %	Change in constant currencies %
Pharmaceuticals	**7 597**	**25.0**	**8 471**	**26.6**	**– 10**	**5**
Alcon	**794**	**8.1**	**1 597**	**14.8**	**– 50**	**– 20**
Sandoz	**1 005**	**11.0**	**1 088**	**11.4**	**– 8**	**1**
Corporate	– 419		– 67		nm	nm
Operating income from continuing operations	**8 977**	**18.2**	**11 089**	**21.3**	**– 19**	**– 2**

nm = not meaningful

Operating income from continuing operations was USD 9.0 billion (–19%, –2% cc), mainly due to amortization of the new oncology assets in Pharmaceuticals. The current year includes an exceptional expense of USD 400 million for a settlement of the specialty pharmacies case in the Southern District of New York, whereas the prior-year benefitted from a one-time commercial settlement gain of USD 302 million and USD 248 million gain from selling a Novartis Venture Fund investment. The negative currency impact of 17 percentage points was mainly due to the strong USD versus the euro, Japanese yen and emerging market currencies. Operating income margin in constant currencies decreased 1.4 percentage points; currency had a negative impact of 1.7 percentage points resulting in a net decrease of 3.1 percentage points to 18.2 percent of net sales.

Additional comments on the changes in operating income by division can be found starting on page 34.

Corporate income and expense amounted to a net expense of USD 419 million in 2015 compared to a net expense of USD 67 million in the prior year. The increased expense was mainly due to the USD 302 million commercial settlement gain and a USD 248 million gain from selling Novartis Venture Fund investments recorded in 2014, partially offset by the gain on the sale of real estate in Switzerland of USD 54 million, lower share-based compensation accruals and lower provision in the captive insurance companies in 2015.

CORE OPERATING INCOME KEY FIGURES[1]

	Year ended Dec 31, 2015 USD millions	Year ended Dec 31, 2014 USD millions	Change in USD %	Change in constant currencies %
Core gross profit from continuing operations	**36 900**	**38 821**	**– 5**	**5**
Marketing & Sales	– 11 729	– 12 355	5	– 5
Research & Development	– 8 738	– 8 723	0	– 6
General & Administration	– 2 389	– 2 552	6	0
Other income	823	563	46	59
Other expense	– 1 077	– 1 281	16	7
Core operating income from continuing operations	**13 790**	**14 473**	**– 5**	**10**
as % of net sales	27.9	27.7		

[1] An explanation of non-IFRS measures and reconciliation tables can be found starting on page 165.

The adjustments made to operating income to arrive at core operating income from continuing operations amounted to USD 4.8 billion (2014: USD 3.4 billion). The increase was mainly driven by higher amortization of the new oncology assets in Pharmaceuticals, higher legal settlement expense and higher acquisition-related expense, whereas 2014 included a commercial settlement gain of USD 302 million, partially offset by the provision of USD 204 million for the US healthcare reform fee.

Excluding these items, core operating income from continuing operations decreased 5% (+10% cc) to USD 13.8 billion. Core operating income margin in constant currencies increased 1.3 percentage points mainly due to higher sales and productivity initiatives; currency had a negative impact of 1.1 percentage points, resulting in a margin of 27.9% of net sales, compared to 27.7% in 2014. Additional comments on the changes in the core operating income by division can be found starting on page 34.

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

	Year ended Dec 31, 2015 USD millions	% of net sales	Year ended Dec 31, 2014 USD millions	% of net sales	Change in USD %	Change in constant currencies %
Pharmaceuticals	**9 420**	**30.9**	**9 514**	**29.9**	**– 1**	**14**
Alcon	**3 063**	**31.2**	**3 811**	**35.2**	**– 20**	**– 7**
Sandoz	**1 659**	**18.1**	**1 571**	**16.4**	**6**	**17**
Corporate	– 352		– 423		17	11
Core operating income from continuing operations	**13 790**	**27.9**	**14 473**	**27.7**	**– 5**	**10**

RESEARCH AND DEVELOPMENT OF PHARMACEUTICALS DIVISION

The following table provides an overview on the reported and core Research and Development expense of the Pharmaceuticals Division:

	Year ended Dec 31, 2015 USD millions	Year ended Dec 31, 2014 USD millions	Change in USD %	Change in constant currencies %
Research and Exploratory Development	– 2 565	– 2 724	6	3
Confirmatory Development	– 4 667	– 4 607	– 1	– 7
Total Pharmaceuticals Division Research and Development expense	**– 7 232**	**– 7 331**	**1**	**– 3**
as % of Pharmaceuticals net sales to third parties	23.8	23.1		
Core Research and Exploratory Development[1]	– 2 493	– 2 654	6	3
Core Confirmatory Development[1]	– 4 560	– 4 343	– 5	– 11
Total Core Pharmaceuticals Division Research and Development expense	**– 7 053**	**– 6 997**	**– 1**	**– 5**
as % of Pharmaceuticals net sales to third parties	23.2	22.0		

[1] Core excludes impairments, amortization and certain exceptional items.

Pharmaceuticals Division Research and Exploratory Development expenditure amounted to USD 7.2 billion in 2015, a decrease of 1% (–3% cc) compared to 2014. Confirmatory Development expenditures increased by 1% (–7% cc) to USD 4.7 billion, compared to USD 4.6 billion in 2014, mainly driven by the additional development expense for the new oncology assets acquired from GSK.

Core R&D expense in the Pharmaceuticals Division as percent of sales decreased by 0.1 percentage points in constant currencies, which was offset by negative currency movements of 1.3 percentage points mainly from the sales base, as the Core R&D expenses are primarily denominated in US dollars and Swiss francs, which resulted in a net increase of 1.2 percentage points to 23.2% of net sales.

NON-OPERATING INCOME & EXPENSE

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

	Year ended Dec 31, 2015 USD millions	Year ended Dec 31, 2014 USD millions	Change in USD %	Change in constant currencies %
Operating income from continuing operations	**8 977**	**11 089**	**– 19**	**– 2**
Income from associated companies	266	1 918	– 86	– 86
Interest expense	– 655	– 704	7	2
Other financial income and expense	– 454	– 31	nm	nm
Income before taxes from continuing operations	**8 134**	**12 272**	**– 34**	**– 17**
Taxes	– 1 106	– 1 545	28	10
Net income from continuing operations	**7 028**	**10 727**	**– 34**	**– 18**
Net income/loss from discontinued operations	10 766	– 447	nm	nm
Net income	**17 794**	**10 280**	**73**	**91**
Basic EPS (USD) from continuing operations	**2.92**	**4.39**	**– 33**	**– 17**
Basic EPS (USD) from discontinued operations	4.48	– 0.18	nm	nm
Total basic EPS (USD)	**7.40**	**4.21**	**76**	**94**

nm = not meaningful

Income from associated companies from continuing operations amounted to USD 266 million in 2015, compared to USD 1.9 billion in 2014. The prior-year benefited from a pre-tax gain of USD 0.8 billion recognized on the sale of the shares of Idenix to Merck, a gain of USD 0.4 billion from the divestment of the shareholding in LTS and from the gain of USD 64 million recorded on the Novartis Venture Funds investments.

In addition, the estimated income from Roche Holding AG declined from USD 599 million in the prior-year period to USD 343 million in 2015, due to an adjustment of USD 157 million recognized in the first quarter of 2015 when Roche published full year results, as well as a lower estimated income contribution from Roche for 2015 due to an announced restructuring.

The estimated share in net results from the GSK Consumer Healthcare joint venture amounted to a loss of USD 17 million, as income from operations was more than offset by integration charges. This estimate will be adjusted based on actual results in the first quarter of 2016. In addition, in 2015, we finalized the purchase price allocation for the investment in the GSK Consumer Healthcare joint venture which is accounted for as associated company and recognized amortization of purchase price adjustments of USD 62 million, resulting in a total estimated loss of USD 79 million for our share in the net results from the GSK Consumer Healthcare joint venture for the year.

Interest expense from continuing operations decreased by 7% (-2 % cc) to USD 655 million from USD 704 million in the prior year.

Other financial income and expense amounted to an expense of USD 454 million compared to USD 31 million in the prior-year period mainly on account of the exceptional charges of USD 410 million related to Venezuela due to foreign exchange losses of USD 211 million and monetary losses from hyperinflation accounting of USD 72 million and a loss of USD 127 million on the sale of PDVSA bonds received to settle a portion of intra-group payables.

The tax rate for continuing operations (taxes as percentage of pre-tax income) in 2015 increased to 13.6% from 12.6% in the prior year, as a result of a change in profit mix from lower to higher tax jurisdictions.

Net income from continuing operations of USD 7.0 billion was down 34% (–18% cc) declining more than operating income mainly due to the exceptional charges related to Venezuela in the current year and the prior-year gains of USD 0.8 billion from the sale of Idenix shares and USD 0.4 billion from the sale of LTS shares.

Basic earnings per share (EPS) from continuing operations was USD 2.92 per share, down 33% (–17% cc), declining less than net income from continuing operations due to the lower number of outstanding shares.

CORE NON-OPERATING INCOME & EXPENSE

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

	Year ended Dec 31, 2015 USD millions	Year ended Dec 31, 2014 USD millions	Change in USD %	Change in constant currencies %
Core operating income from continuing operations	**13 790**	**14 473**	**– 5**	**10**
Income from associated companies	981	943	4	4
Interest expense	– 655	– 704	7	2
Other financial income and expense	– 24	– 31	23	nm
Core income before taxes from continuing operations	**14 092**	**14 681**	**– 4**	**10**
Taxes	– 2 051	– 2 028	– 1	– 16
Core net income from continuing operations	**12 041**	**12 653**	**– 5**	**9**
Core net income/loss from discontinued operations	– 256	102	nm	nm
Core net income	**11 785**	**12 755**	**– 8**	**6**
Core basic EPS (USD) from continuing operations	**5.01**	**5.19**	**– 3**	**10**
Core basic EPS (USD) from discontinued operations	– 0.11	0.04	nm	nm
Core basic EPS (USD)	**4.90**	**5.23**	**– 6**	**7**

nm = not meaningful

Core income from associated companies increased to USD 981 million compared to USD 943 million in 2014. Our estimated share in core results from the consumer healthcare joint venture with GSK, which amounted to USD 213 million in 2015, was offset by decreases in our estimated share of core results

from Roche (from USD 856 million to USD 766 million) and prior-year income from associated companies of the Novartis Venture Fund.

Core other financial income and expense, which exclude the exceptional charges of USD 410 million related to Venezuela, amounted to a net expense of USD 24 million, compared to USD 31 million in 2014.

The core tax rate from continuing operations (core tax as a percentage of core pre-tax income) increased to 14.6% from 13.8% in 2014, mainly as a result of a change in profit mix from lower to higher tax jurisdictions.

Core net income from continuing operations of USD 12.0 billion was down 5% (+9% cc), in line with core operating income.

Core basic EPS from continuing operations was USD 5.01 (–3%, +10% cc), growing ahead of core net income due to lower average outstanding shares and lower minority interests.

DISCONTINUED OPERATIONS

	Year ended Dec 31, 2015 USD millions	Year ended Dec 31, 2014 USD millions
Net sales to third parties from discontinued operations	**601**	**5 816**
Operating income/loss from discontinued operations	**12 477**	**– 353**
Net income/loss from discontinued operations	**10 766**	**– 447**
Attributable to:		
Shareholders of Novartis AG	*10 758*	*– 444*
Non-controlling interests	*8*	*– 3*
Basic earnings per share (USD) from discontinued operations	**4.48**	**– 0.18**
Free cash flow from discontinued operations	**– 230**	**– 172**

Operational results for discontinued operations in 2015 include the results from the Vaccines influenza business, prior to its divestment to CSL Limited on July 31, 2015, as well as results from the Vaccines non-influenza business and OTC until March 2, 2015. Operational results from the Animal Health business, which was divested on January 1, 2015 include only the divestment gain. The prior year included the results of all divested units during the full year.

Discontinued operations also include the exceptional pre-tax gains of USD 12.7 billion from the divestment of Animal Health (USD 4.6 billion) and the transactions with GSK (USD 2.8 billion for the Vaccines non-influenza business and USD 5.9 billion arising from the contribution of Novartis OTC into the GSK Consumer Healthcare joint venture). In addition, the GSK transactions resulted in USD 0.6 billion of additional transaction-related costs that were expensed.

Net sales to third parties of the discontinued operations in 2015 amounted to USD 0.6 billion compared to USD 5.8 billion in 2014.

Operating income from discontinued operations in 2015 amounted to an income of USD 12.5 billion which was mainly driven by the exceptional pre-tax gains from the portfolio transformation. Excluding the divestment gains, the remaining operating loss from discontinued operations was USD 0.2 billion, representing the operating performance of the Vaccines influenza business up to July 31, 2015 as well as the Vaccines non-influenza business and OTC until their respective divestment dates, and is net of the partial reversal of USD 0.1 billion of the impairment of the assets of Vaccines influenza business recorded in 2014.

The prior year operating loss of USD 353 million included an exceptional impairment charge of USD 1.1 billion for the Vaccines influenza business which was partially offset by an exceptional pre-tax gain of USD 0.9 billion from the divestment of our blood transfusion diagnostics unit.

Net income from discontinued operations amounted to USD 10.8 billion in 2015 compared to a net loss USD 447 million in 2014. For more information on discontinued operations please see pages 145 and 147 and Note 30 to the Novartis Group consolidated financial statements.

TOTAL GROUP

For the total Group, net income amounted to USD 17.8 billion compared to USD 10.3 billion in 2014, impacted by the exceptional divestment gains included in the net income from the discontinued operations. Basic earnings per share increased to USD 7.40 from USD 4.21.

Factors affecting comparability of year-on-year results of operations

SIGNIFICANT TRANSACTIONS IN 2015

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 2015 and 2014 are mentioned below.

PORTFOLIO TRANSFORMATION TRANSACTIONS

Transaction with Eli Lilly and Company

On January 1, 2015, Novartis closed its transaction with Eli Lilly and Company, USA (Lilly) announced in April 2014 to divest its Animal Health business for USD 5.4 billion in cash. This resulted in a pre-tax gain of USD 4.6 billion which is recorded in operating income from discontinued operations.

Transactions with GlaxoSmithKline plc

On March 2, 2015, Novartis closed its transactions with GlaxoSmithKline plc, Great Britain (GSK) announced in April 2014 with the following consequences:

Pharmaceuticals – Acquisition of GSK oncology products

Novartis acquired GSK's oncology products and certain related assets for an aggregate cash consideration of USD 16.0 billion. Up to USD 1.5 billion of this cash consideration at the acquisition date is contingent on certain development mile-

stones. The fair value of this potentially refundable consideration is USD 0.1 billion. In addition, under the terms of the agreement, Novartis is 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. The purchase price allocation of the fair value of the consideration of USD 15.9 billion resulted in net identified assets of USD 13.5 billion and goodwill of USD 2.4 billion. Since the acquisition the business generated net sales of USD 1.8 billion. Management estimates net sales for the entire year 2015 would have amounted to USD 2.1 billion had the Oncology products been acquired at the beginning of the 2015 reporting period. The net results from operations on a reported basis since the acquisition date were not significant, mainly due to amortization of intangible assets.

Vaccines – Divestment

Novartis has divested its Vaccines business (excluding its Vaccines influenza business) to GSK for up to USD 7.1 billion, plus royalties. The USD 7.1 billion consists of USD 5.25 billion paid at closing and up to USD 1.8 billion in future milestone payments. The fair value of the contingent future milestones and royalties is USD 1.0 billion, resulting in a fair value of consideration received of USD 6.25 billion. Included in this amount is a USD 450 million milestone payment received in late March 2015. The sale of this business resulted in a pre-tax gain of USD 2.8 billion which is recorded in operating income from discontinued operations.

Novartis's Vaccines influenza business is excluded from the GSK Vaccines business acquisition. However, GSK entered into a future option arrangement with Novartis in relation to the Vaccines influenza business, pursuant to which Novartis could have unilaterally required GSK to acquire the entire or certain parts of its Vaccines influenza business for consideration of up to USD 250 million (the Influenza Put Option) if the divestment to CSL Limited, Australia (CSL), discussed below, had not been completed. The option period was 18 months from the closing date of the GSK transaction, but terminated with the sale of the Vaccines influenza business to CSL on July 31, 2015. Novartis paid GSK a fee of USD 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 agreed to create a combined consumer healthcare business through a joint venture between Novartis OTC and GSK Consumer Healthcare. On March 2, 2015, a new entity was formed via contribution of businesses from both Novartis and GSK. Novartis has a 36.5% interest in the newly created entity. Novartis has valued the contribution of 63.5% of its OTC Division in exchange for 36.5% of the GSK Consumer Healthcare business at fair value. Based on the estimates of the fair values exchanged, an investment in an associated company of USD 7.6 billion was recorded. The resulting pre-tax gain, net of transaction-related costs, of USD 5.9 billion is recorded in operating income from discontinued operations.

Novartis has four of eleven seats on the joint venture entity's Board of Directors. Furthermore, Novartis has customary minority rights and also exit rights at a pre-defined, market-based pricing mechanism.

The investment is accounted for using the equity method of accounting using estimated results for the last quarter of the year. Any differences between this estimate and actual results, when available, will be adjusted in the Group's 2016 consolidated financial statements.

Additional GSK related cost

The GSK transaction resulted in USD 0.6 billion of additional transaction-related costs that were expensed.

Transaction with CSL

On October 26, 2014, Novartis entered into an agreement with CSL to sell its Vaccines influenza business to CSL for USD 275 million. Entering into the separate divestment agreement with CSL resulted in the Vaccines influenza business being classified as a separate disposal group consisting of a group of cash generating units within the Vaccines Division, requiring the performance of a separate valuation of the Vaccines influenza business net assets. This triggered the recognition of an exceptional impairment charge in 2014 of USD 1.1 billion, as the estimated net book value of the Vaccines influenza business net assets was above the USD 275 million consideration. The transaction with CSL was completed on July 31, 2015, resulting in a partial reversal of the impairment recorded in 2014 in the amount of USD 0.1 billion, which is included in operating income from discontinued operations.

OTHER SIGNIFICANT TRANSACTIONS IN 2015

Pharmaceuticals – Acquisition of Spinifex Pharmaceuticals, Inc.

On June 29, 2015 Novartis entered into an agreement to acquire Spinifex Pharmaceuticals, Inc. (Spinifex), a US and Australian-based, privately held development stage company, focused on developing a peripheral approach to treat neuropathic pain. The transaction closed on July 24, 2015, and the total purchase consideration was USD 312 million. The amount consisted of an initial cash payment of USD 196 million and the net present value of the contingent consideration of USD 116 million due to previous Spinifex shareholders, which they are eligible to receive upon achievement of specified development and commercialization milestones. The purchase price allocation resulted in net identifiable assets of USD 263 million and goodwill of USD 49 million. Results of operations since the date of acquisition were not material.

Pharmaceuticals – Acquisition of Admune Therapeutics LLC

On October 16, 2015, Novartis acquired Admune Therapeutics LLC (Admune), a US-based, privately held company, broad-

ening Novartis' pipeline of cancer immunotherapies. The total purchase consideration amounted to USD 258 million. This amount consists of an initial cash payment of USD 140 million and the net present value of the contingent consideration of USD 118 million due to Admune's previous owners, which they are eligible to receive upon the achievement of specified development and commercialization milestones. The purchase price allocation resulted in net identifiable assets of USD 258 million. No goodwill was recognized. Results of operations since the date of acquisition were not material.

SIGNIFICANT TRANSACTIONS 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 USD 1.7 billion in cash. The pre-tax gain on this transaction was approximately USD 0.9 billion and was recorded in operating income from discontinued 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 USD 248 million (excluding cash acquired). This amount consists of an initial cash payment and the net present value of contingent consideration of USD 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 USD 152 million (excluding cash acquired) and goodwill of USD 96 million. Results of operations since the date of 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 USD 0.8 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 USD 350 million in cash. The purchase price allocation resulted in net identified assets of USD 180 million and goodwill of USD 170 million. Results of operations since the date of acquisition were not material.

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 USD 0.4 billion which was recorded in income from associated companies.

CLASSIFICATION AS CONTINUING OPERATIONS AND DISCONTINUED OPERATIONS

Following the April 22, 2014 announcement of the portfolio transformation transactions with Lilly and GSK, as described above, Novartis reported the Group's financial statements for the current and prior years as "continuing operations" and "discontinued operations".

Continuing operations comprise the activities of the Pharmaceuticals, Alcon and Sandoz Divisions and the continuing Corporate activities. Continuing operations also include the results from Oncology assets acquired from GSK and the estimated results from the 36.5% interest in the GSK/Novartis consumer healthcare joint venture for the period from March 2, 2015 to December 31, 2015 (the latter reported as part of income from associated companies).

Discontinued operations include in 2015 the operational results from the Vaccines influenza business, prior to its divestment to CSL Limited on July 31, 2015, as well as results from the Vaccines non-influenza business and OTC business until March 2, 2015. Operational results from the Animal Health business, which was divested on January 1, 2015, include only the divestment gain.

Discontinued operations in 2015 also include the exceptional pre-tax gain of USD 12.7 billion from the divestment of Animal Health (USD 4.6 billion) and the transactions with GSK (USD 2.8 billion for the Vaccines non-influenza business and USD 5.9 billion arising from the contribution of Novartis OTC into the GSK Consumer Healthcare joint venture). In addition the GSK transactions resulted in USD 0.6 billion of additional transaction-related expenses reported in Corporate discontinued operations.

In 2014, discontinued operations include the results of the Vaccines influenza and non-influenza business, OTC and Animal Health for the full year. Results also included an exceptional impairment charge of USD 1.1 billion for the Vaccines influenza business, which was reduced by USD 0.1 billion in 2015 upon closing of the CSL transaction and an exceptional pre-tax gain of USD 0.9 billion arising from the USD 1.7 billion divestment of the blood transfusion diagnostics unit to Grifols S.A., completed on January 9, 2014.

Excluded from discontinued 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.

As required by IFRS, results of the discontinued operations exclude any further depreciation and amortization related to discontinued operations from the date of the portfolio transformation announcement of April 22, 2014.

Free cash flow

Novartis defines free cash flow as cash flow from operating activities and 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 free cash flow measure, which is a non-IFRS measure, is discussed more on page 165. The following is a summary of the free cash flow:

	2015 USD millions	2014 USD millions	Change USD millions
Operating income from continuing operations	**8 977**	**11 089**	**– 2 112**
Reversal of non-cash items			
Depreciation, amortization and impairments	5 575	4 751	824
Change in provisions and other non-current liabilities	1 642	1 490	152
Other	– 96	122	– 218
Operating income adjusted for non-cash items	**16 098**	**17 452**	**– 1 354**
Interest and other financial receipts	1 180	1 067	113
Interest and other financial payments	– 669	– 692	23
Taxes paid	– 2 454	– 2 179	– 275
Payments out of provisions and other net cash movements in non-current liabilities	– 1 207	– 1 125	– 82
Change in inventory and trade receivables less trade payables	– 617	– 731	114
Change in other net current assets and other operating cash flow items	– 246	106	– 352
Cash flows from operating activities from continuing operations	**12 085**	**13 898**	**– 1 813**
Purchase of property, plant & equipment	– 2 367	– 2 624	257
Purchase of intangible assets	– 1 138	– 780	– 358
Purchase of financial assets	– 264	– 239	– 25
Purchase of other non-current assets	– 82	– 60	– 22
Proceeds from sales of property, plant & equipment	237	60	177
Proceeds from sales of intangible assets	621	246	375
Proceeds from sales of financial assets	166	431	– 265
Proceeds from sales of other non-current assets	1	2	– 1
Free cash flow from continuing operations	**9 259**	**10 934**	**– 1 675**
Free cash flow from discontinued operations	– 230	– 172	– 58
Free cash flow	**9 029**	**10 762**	**– 1 733**

In 2015, free cash flow from continuing operations decreased by 15% to USD 9.3 billion compared to USD 10.9 billion in 2014. This decrease was primarily due to the negative currency impact on operations. The prior year also included higher proceeds from Novartis Venture Fund divestments and commercial settlements. Total free cash flow including the continuing and discontinued operations was USD 9.0 billion in 2015 compared to USD 10.8 billion in 2014.

Liquidity, cash flow and capital resources

The following tables summarize the Group's cash flow and net debt:

	2015 USD millions	2014 USD millions	Change USD millions
Cash flows from operating activities from continuing operations	12 085	13 898	– 1 813
Cash flows used in investing activities from continuing operations	– 19 666	– 8	– 19 658
Cash flows from operating and investing activities from discontinued operations	8 694	888	7 806
Cash flows used in financing activities	– 9 176	– 8 147	– 1 029
Currency translation effect on cash and cash equivalents	– 286	– 295	9
Net change in cash and cash equivalents	**– 8 349**	**6 336**	**– 14 685**
Change in marketable securities, commodities, time deposits and derivative financial instruments	– 66	– 1 696	1 630
Change in current and non-current financial debts and derivative financial instruments	– 1 520	– 2 393	873
Change in net debt	**– 9 935**	**2 247**	**– 12 182**
Net debt at January 1	– 6 549	– 8 796	2 247
Net debt at December 31	**– 16 484**	**– 6 549**	**– 9 935**

Group net debt consists of:

	2015 USD millions	2014 USD millions	Change USD millions
Current financial debts and derivative financial instruments	– 5 604	– 6 612	1 008
Non-current financial debts	– 16 327	– 13 799	– 2 528
Total financial debt	**– 21 931**	**– 20 411**	**– 1 520**
Less liquidity			
Cash and cash equivalents	4 674	13 023	– 8 349
Marketable securities, commodities, time deposits and derivative financial instruments	773	839	– 66
Total liquidity	**5 447**	**13 862**	**– 8 415**
Net debt at December 31	**– 16 484**	**– 6 549**	**– 9 935**

Cash flow from operating activities from continuing operations decreased to USD 12.1 billion from USD 13.9 billion in 2014.

The decrease was primarily due to the negative currency impact on operations. The prior year also included higher proceeds from commercial settlements.

The cash outflow for investing activities from continuing operations amounted to USD 19.7 billion in 2015. This was primarily due to the outflow of USD 16.5 billion for acquisitions of businesses, mainly the oncology business from GSK for USD 16.0 billion, the net outflow of USD 2.8 billion for the purchase of property, plant and equipment, intangible and other non-current assets and the net outflow of USD 0.3 billion from the change in marketable securities.

In 2014, cash flows used in investing activities from continuing operations was a small net outflow of USD 8 million. This was primarily due to net outflows of USD 0.3 billion from the acquisition of businesses, USD 3.0 billion mainly from purchase of property, plant and equipment, offset by USD 1.4 billion of proceeds from the sale of investments in associated companies, particularly LTS Lohmann Therapie-Systeme AG and Idenix Pharmaceuticals, Inc. and USD 1.9 billion proceeds from the net sale of other marketable securities, including maturing long-term deposits.

The cash flows used in financing activities amounted to USD 9.2 billion, compared to USD 8.1 billion in 2014. The 2015 amount includes a cash outflow of USD 6.6 billion for the dividend payment and USD 4.5 billion for treasury share transactions, net. The net inflow from the increase in current and non-current financial debt of USD 2.0 billion was mainly due to the issuance of three Swiss franc denominated bonds for a total amount of USD 1.5 billion in the first half of 2015, the issuance of two US dollar denominated bonds totaling USD 3.0 billion in the fourth quarter 2015 and the increase in commercial paper outstanding of USD 0.4 billion, partially offset by the repayment at maturity of a US dollar denominated bond of USD 2.0 billion and a Swiss franc denominated bond of USD 0.9 billion. In 2014, the cash outflows included USD 6.8 billion for the dividend payment and USD 4.5 billion for treasury share transactions, net. These outflows were partially offset by increase in the current and non-current financial debt of USD 3.3 billion.

The net cash inflows from discontinued operations of USD 8.7 billion in 2015 were mainly driven by the net proceeds of USD 8.9 billion from the divestments in connection with the portfolio transformation transactions. In 2014, the net cash inflow of USD 0.9 billion consisted mainly of proceeds from the divestment of the blood transfusion diagnostics unit to Grifols S.A.

Total financial debt, including derivatives, amounted to USD 21.9 billion at December 31, 2015 compared to USD 20.4 billion at December 31, 2014.

Non-current financial debt increased by USD 2.5 billion to USD 16.3 billion at December 31, 2015, from USD 13.8 billion at December 31, 2014. The increase was mainly due to the issuance of three Swiss franc denominated bonds for a total amount of USD 1.5 billion and the issuance of two US dollar denominated bonds for a total of USD 3.0 billion, partially offset by the reclassification to current financial debt of a euro denominated bond of USD 1.6 billion.

Current financial debt decreased by USD 1.0 billion to USD 5.6 billion at December 31, 2015, from USD 6.6 billion at December 31, 2014. The decrease was mainly due to repayment at maturity of a US dollar denominated bond of USD 2.0 billion and a Swiss franc denominated bond of USD 0.9 billion, partially offset by the reclassification from non-current financial debt of the USD 1.6 billion euro denominated bond mentioned above.

Overall current financial debt consists of the current portion of non-current debt of USD 1.7 billion and other short-term borrowings (including derivatives and commercial paper) of USD 3.9 billion. Group net debt increased to USD 16.5 billion at the end of 2015 compared to USD 6.5 billion at the end of 2014.

Novartis has two US commercial paper programs under which it can issue up to USD 9 billion in the aggregate of unsecured commercial paper notes. Novartis also has a Japanese commercial paper program under which it can issue up to JPY 150 billion (approximately USD 1.25 billion) of unsecured commercial paper notes. Commercial paper notes totaling USD 1.1 billion under these three programs were outstanding as per December 31, 2015. Novartis further has a committed credit facility of USD 6 billion, entered into on September 23, 2015. This credit facility is provided by a syndicate of banks and is intended to be used as a backstop for the US commercial paper programs. It matures in September 2020 and was undrawn as per December 31, 2015.

The long-term credit rating for the company continues to be double-A (Moody's Aa3; Standard & Poor's AA–; Fitch AA).

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 2009, 2010, 2012, 2014 and 2015 and raised funds through our commercial paper programs. In addition, reverse repurchasing agreements are contracted and Novartis has entered into credit support agreements with various banks for derivative transactions.

An overview of our current financial debt and related interest rates is set forth below:

	December 31 USD millions	Average interest rate at year end %	Average balance during the year USD millions	Average interest rate during the year %	Maximum balance during the year USD millions
2015					
Interest-bearing accounts of associates payable on demand	1 645	0.62	1 720	0.59	1 803
Other bank and financial debt	1 185	5.98	1 280	5.54	2 785
Commercial paper	1 085	0.62	3 545	0.19	5 686
Current portion of non-current financial debt	1 659	na	1 916	na	3 044
Fair value of derivative financial instruments	30	na	79	na	188
Total current financial debt	**5 604**		**8 540**		**13 506**
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	50	na	92
Total current financial debt	**6 612**		**7 204**		**10 633**

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 (December 31, 2015 interest rate: 0.5%). Other bank and financial debt refer to usual lending and overdraft facilities.

The maturity schedule of our net debt is as follows:

December 31, 2015	Due within one month USD millions	Due later than one month but less than three months USD millions	Due later than three months but less than one year USD millions	Due later than one year but less than five years USD millions	Due after five years USD millions	Total USD millions
Current assets						
Marketable securities and time deposits	22	11	200	247	62	542
Commodities					86	86
Derivative financial instruments and accrued interest	40	67	38			145
Cash and cash equivalents	4 674					4 674
Total current financial assets	**4 736**	**78**	**238**	**247**	**148**	**5 447**
Non-current liabilities						
Financial debt				– 4 664	– 11 663	– 16 327
Financial debt – undiscounted				*– 4 676*	*– 11 797*	*– 16 473*
Total non-current financial debt				**– 4 664**	**– 11 663**	**– 16 327**
Current liabilities						
Financial debt	– 3 258	– 289	– 2 027			– 5 574
Financial debt – undiscounted	*– 3 258*	*– 289*	*– 2 028*			*– 5 575*
Derivative financial instruments	– 8	– 20	– 2			– 30
Total current financial debt	**– 3 266**	**– 309**	**– 2 029**			**– 5 604**
Net debt	**1 470**	**– 231**	**– 1 791**	**– 4 417**	**– 11 515**	**– 16 484**

December 31, 2014	Due within one month USD millions	Due later than one month but less than three months USD millions	Due later than three months but less than one year USD millions	Due later than one year but less than five years USD millions	Due after five years USD millions	Total USD millions
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**

The following table provides a breakdown of liquidity and financial debt by currency:

LIQUIDITY AND FINANCIAL DEBT BY CURRENCY
(as of December 31)

	Liquidity in % 2015[1]	Liquidity in % 2014[1]	Financial debt in % 2015[2]	Financial debt in % 2014[2]
USD	50	80	64	59
EUR	16	1	14	17
CHF	13	10	14	13
JPY	1		5	8
Other	20	9	3	3
	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.

Contractual obligations

The following table summarizes the Group's contractual obligations and other commercial commitments, as well as the effect these obligations and commitments are expected to have on the Group's liquidity and cash flow in future periods:

		Payments due by period			
	Total USD millions	Less than 1 year USD millions	2–3 years USD millions	4–5 years USD millions	After 5 years USD millions
Non-current financial debt, including current portion	**17 986**	1 659	505	5 460	10 362
Operating leases	**2 996**	273	335	207	2 181
Unfunded pensions and other post-employment benefit plans	**2 165**	113	234	251	1 567
Research & Development					
Unconditional commitments	**650**	88	147	265	150
Potential milestone commitments	**2 405**	601	781	626	397
Purchase commitments					
Property, plant & equipment	**359**	304	55		
Total contractual cash obligations	**26 561**	**3 038**	**2 057**	**6 809**	**14 657**

The Group intends to fund the R&D and purchase commitments with internally generated resources.

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 2015 and 2014 for currencies most important to the Group:

	2015		2014	
Currency	Net sales %	Operating expenses %	Net sales %	Operating expenses %
US dollar (USD)	40	42	36	39
Euro (EUR)	24	23	26	25
Swiss franc (CHF)	2	13	2	13
Japanese yen (JPY)	6	4	7	5
Chinese yuan (CNY)	4	3	3	3
British pound (GBP)	3	3	3	2
Canadian dollar (CAD)	3	1	3	1
Brazilian real (BRL)	2	2	2	2
Australian dollar (AUD)	2	1	2	1
Russian ruble (RUB)	1	1	2	1
Other currencies	13	7	14	8

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 steps which could significantly impact the value of their 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 is exposed to potential devaluation losses in the income statement on its total intercompany balances with its subsidiaries in Venezuela, which at December 31, 2015 amounted to USD 0.3 billion. The Group also has an equivalent of approximately USD 0.2 billion of cash in local currency, which is only slowly being approved for remittance outside of the country and which is subject to loss of purchase power due to high inflation in the country.

Subsidiaries whose functional currencies have experienced a cumulative inflation rate of more than 100% over the past three years apply the rules of IAS 29 "Financial Reporting in Hyperinflationary Economies". Gains and losses incurred upon adjusting the carrying amounts of non-monetary assets and liabilities for inflation are recognized in the income statement. The subsidiaries in Venezuela restate non-monetary items in the balance sheet in line with the requirements of IAS 29. The corresponding monetary loss of USD 72 million is included in the 2015 financial results.

In 2014 and through October 2015, the exchange rate used by the Group for consolidation of the financial statements of its Venezuela subsidiaries was the official exchange rate for the Venezuela bolivar (VEF) of VEF 6.3/USD, which is available for imports of specific goods and services of national priority, including medicines and medical supplies, as published by the Centro Nacional de Comercio Exterior (CENCOEX, formerly CADIVI).

In November 2015, a Venezuela subsidiary of the Group agreed with CENCOEX to settle a substantial part of our intercompany trade payables dated on or before December 31, 2014 in a transaction that required the Venezuela subsidiary to purchase a USD denominated bond at par value issued by Petróleos de Venezuela (PDVSA), with a coupon rate of 6% per annum maturing in 2024. In Venezuela there are differing official exchange rates against the USD and for the settlement of these intercompany trade payables, through the purchase of the USD bond, CENCOEX set the exchange rate at VEF 11.0/USD. As a result, from November 2015 the Group changed its exchange rate used for the consolidation of the financial statements of its Venezuela subsidiaries. The use of the new exchange rate by the Venezuela subsidiaries resulted in a USD 211 million loss from the re-measurement of the intra-Group and third party liabilities.

As agreed with CENCOEX, the Venezuela subsidiary purchased the PDVSA bond on December 9, 2015. The bond was sold on December 11, 2015. The proceeds from the sale of this bond were USD 73 million resulting in a loss of USD 127 million.

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 2015, 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 for-

eign currency options to hedge. For more information on how these transactions affect our consolidated financial statements and on how foreign exchange rate exposure is managed, see Notes 1, 5, 16 and 29 to the Group's consolidated financial statements.

In 2015, the US dollar significantly increased in value against most currencies. In particular, the average value of the euro, Japanese yen and emerging market currencies (especially the Brazilian real and Russian ruble) decreased in 2015 against the USD 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 versus the euro and the USD.

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			Year-end		
USD per unit	2015	2014	Change in %	2015	2014	Change in %
AUD	0.753	0.903	– 17	0.731	0.819	– 11
BRL	0.305	0.426	– 28	0.253	0.376	– 33
CAD	0.784	0.906	– 13	0.721	0.861	– 16
CHF	1.040	1.094	– 5	1.011	1.010	0
CNY	0.159	0.162	– 2	0.154	0.161	– 4
EUR	1.110	1.329	– 16	1.093	1.215	– 10
GBP	1.529	1.648	– 7	1.483	1.556	– 5
JPY (100)	0.826	0.947	– 13	0.831	0.836	– 1
RUB (100)	1.649	2.649	– 38	1.362	1.722	– 21

The following table provides a summary of the currency impact on key Group figures due to their conversion into USD, 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.

CURRENCY IMPACT ON KEY FIGURES

	Change in constant currencies % 2015	Change in USD % 2015	Percentage point currency impact 2015	Change in constant currencies % 2014	Change in USD % 2014	Percentage point currency impact 2014
Net sales from continuing operations	5	– 5	– 10	3	1	– 2
Operating income from continuing operations	– 2	– 19	– 17	7	1	– 6
Net income from continuing operations	– 18	– 34	– 16	21	15	– 6
Core operating income from continuing operations	10	– 5	– 15	7	2	– 5
Core net income from continuing operations	9	– 5	– 14	8	3	– 5

For additional information on the effects of currency fluctuations, see Note 29 to the Group's consolidated financial statements.

Condensed Consolidated Balance Sheets

	Dec 31, 2015 USD millions	Dec 31, 2014 USD millions	Change USD millions
Assets			
Property, plant & equipment	15 982	15 983	– 1
Goodwill	31 174	29 311	1 863
Intangible assets other than goodwill	34 217	23 832	10 385
Financial and other non-current assets	27 338	18 700	8 638
Total non-current assets	**108 711**	**87 826**	**20 885**
Inventories	6 226	6 093	133
Trade receivables	8 180	8 275	– 95
Other current assets	2 992	2 530	462
Cash, marketable securities, commodities, time deposits and derivative financial instruments	5 447	13 862	– 8 415
Assets related to discontinued operations [1]	0	6 801	– 6 801
Total current assets	**22 845**	**37 561**	**– 14 716**
Total assets	**131 556**	**125 387**	**6 169**
Equity and liabilities			
Total equity	**77 122**	**70 844**	**6 278**
Financial debts	16 327	13 799	2 528
Other non-current liabilities	14 399	13 771	628
Total non-current liabilities	**30 726**	**27 570**	**3 156**
Trade payables	5 668	5 419	249
Financial debts and derivatives	5 604	6 612	– 1 008
Other current liabilities	12 436	12 524	– 88
Liabilities related to discontinued operations [1]	0	2 418	– 2 418
Total current liabilities	**23 708**	**26 973**	**– 3 265**
Total liabilities	**54 434**	**54 543**	**– 109**
Total equity and liabilities	**131 556**	**125 387**	**6 169**

[1] For details of discontinued operations in the consolidated balance sheet, refer to Note 30 to the consolidated financial statements.

Total non-current assets of USD 108.7 billion at December 31, 2015 increased by USD 20.9 billion compared to December 31, 2014. Intangible assets other than goodwill increased by USD 10.4 billion to USD 34.2 billion, mainly on account of the new oncology assets acquired from GSK, which added product rights amounting to USD 13.0 billion to the intangible assets of the Group. This increase was partially offset by the amortization of intangible assets of USD 3.8 billion. Goodwill increased by USD 1.9 billion to USD 31.2 billion, mainly on account of the goodwill of USD 2.4 billion recorded on the new oncology assets, partially offset by currency translation adjustments of USD 0.6 billion.

Financial and other non-current assets increased by USD 8.6 billion to USD 27.3 billion, mainly on account of the 36.5% investment in the GSK consumer healthcare joint venture of USD 7.6 billion, while investments in property, plant and equipment were in line with the prior year.

Total current assets decreased by USD 14.7 billion to USD 22.8 billion at December 31, 2015, as cash and cash equivalents decreased by USD 8.4 billion to USD 5.4 billion, mainly on account of the net cash outflows from the portfolio transformation transactions as well as the dividend payment. The assets related to discontinued operations and held for sale reduced by USD 6.8 billion as a result of the closing of the portfolio transformation transactions in 2015. Trade receivables, inventories and other current assets were in line with the prior year.

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, 2015 and 2014:

	2015 USD millions	2014 USD millions
Not overdue	7 318	7 406
Past due for not more than one month	265	334
Past due for more than one month but less than three months	255	275
Past due for more than three months but less than six months	193	174
Past due for more than six months but less than one year	156	102
Past due for more than one year	135	140
Provisions for doubtful trade receivables	– 142	– 156
Total trade receivables, net	**8 180**	**8 275**

With regard to the GIPS countries, the majority of the outstanding trade receivables from these countries are due directly from local governments or from government-funded entities. The gross trade receivables from GIPS countries at December 31, 2015 amount to USD 920 million (2014: USD 915 million), of which USD 58 million are past due for more than one year (2014: USD 69 million) and for which provisions of USD 37 million have been recorded (2014: USD 48 million). At December 31, 2015 amounts past due for more than one year are not significant in any of the GIPS countries on a standalone basis.

There is also a risk that certain countries could devalue their currency. The most significant exposure for Novartis in this respect is in Venezuela, which is described in more detail in paragraph "Effects of currency fluctuation" on page 153.

Trade payables, other current and non-current liabilities of USD 32.5 billion increased by USD 0.8 billion compared to USD 31.7 billion at December 31, 2014. This change was due to an increase in other non-current liabilities of USD 0.6 billion and an increase in trade payables of USD 0.2 billion. The

liabilities related to discontinued operations and held for sale reduced by USD 2.4 billion as a result of the closing of the portfolio transformation transactions in 2015.

Included in other current liabilities are USD 1.7 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 2010 in Switzerland and in the US up to 2009, with the exception of one open US position in 2007.

The Group's equity increased by USD 6.3 billion to USD 77.1 billion at December 31, 2015, compared to USD 70.8 billion at December 31, 2014. The increase was on account of our net income of USD 17.8 billion, share-based compensation of USD 0.8 billion and the settlement of the obligation under the share repurchase agreement of USD 0.7 billion. The increase was partially offset by the USD 6.6 billion dividend payment, net purchases of treasury shares of USD 4.5 billion, unfavorable currency translation differences of USD 1.7 billion and net actuarial losses from defined benefit plans of USD 0.1 billion.

The Group's liquidity amounted to USD 5.4 billion at December 31, 2015, compared to USD 13.9 billion at December 31, 2014, and net debt increased over the same period by USD 10.0 billion to USD 16.5 billion. The debt/equity ratio decreased to 0.28:1 at December 31, 2015 compared to 0.29:1 at December 31, 2014.

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		
	2015	2014	Change	2015 USD millions	2014 USD millions	Change USD millions
Balance at beginning of year	**2 398.6**	**2 426.1**	**– 27.5**	**70 766**	**74 343**	**– 3 577**
Shares acquired to be held in Group Treasury	– 9.6	– 46.8	37.2	– 897	– 4 057	3 160
Shares acquired to be canceled	– 49.9	– 27.0	– 22.9	– 4 805	– 2 396	– 2 409
Other share purchases	– 4.1	– 5.4	1.3	– 417	– 473	56
Increase in equity from exercise of options and employee transactions	27.0	41.4	– 14.4	1 592	2 400	– 808
Equity-based compensation	11.9	10.3	1.6	815	1 143	– 328
Decrease/(Increase) of treasury share repurchase obligation under a share buy-back trading plan				658	– 658	1 316
Dividends				– 6 643	– 6 810	167
Net income of the year attributable to shareholders of Novartis AG				17 783	10 210	7 573
Other comprehensive income attributable to shareholders of Novartis AG				– 1 806	– 2 936	1 130
Balance at end of year	**2 373.9**	**2 398.6**	**– 24.7**	**77 046**	**70 766**	**6 280**

During 2015, 38.9 million treasury shares were delivered as a result of options being exercised and physical share deliveries related to equity-based participation plans (2014: 51.7 million shares). 9.6 million shares were repurchased on the SIX Swiss Exchange first trading line (2014: 46.8 million), 4.1 million shares were acquired from employees which were previously granted to them under the respective programs (2014: 5.4 million). In addition, Novartis repurchased 49.9 million shares on the SIX Swiss Exchange second trading line under the USD 5 billion share buyback announced in 2013, which was completed in November 2015, and also to offset the dilutive impact from equity-based participation plans (2014: 27.0 million). With these transactions, the total number of shares outstanding was reduced by 24.7 million in 2015 (2014: reduction of 27.5 million shares) and the sixth share buyback program, which was approved by the shareholders at the AGM 2008 has been completed.

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 sustain and 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. In addition, we offer global patient assistance programs.

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 2015, 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 in excess of 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 estimated and 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 relevant 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. The estimated amount of 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

				Income statement charge			
	Revenue deductions provisions at January 1 USD millions	Effect of currency translation and business combinations USD millions	Payments/ utilizations USD millions	Adjustments of prior years USD millions	Current year USD millions	Change in provisions offset against gross trade receivables USD millions	Revenue deductions provisions at December 31 USD millions
2015							
US-specific healthcare plans and program rebates	1 097		– 2 823	– 90	2 981		1 165
Non-US-specific healthcare plans and program rebates	1 015	– 109	– 1 716	– 3	1 846	– 9	1 024
Non-healthcare plans and program-related rebates, returns and other deductions	1 421	– 69	– 10 679	– 124	10 993	59	1 601
Total continuing operations 2015	**3 533**	**– 178**	**– 15 218**	**– 217**	**15 820**	**50**	**3 790**
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**

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 USD millions	Charged directly without being recorded in revenue deduction provisions USD millions	Total USD millions	In % of gross sales
2015				
Pharmaceuticals gross sales subject to deductions			**37 853**	**100.0**
US-specific healthcare plans and program rebates	– 1 422		– 1 422	– 3.8
Non-US-specific healthcare plans and program rebates	– 1 150	– 779	– 1 929	– 5.1
Non-healthcare plans and program-related rebates, returns and other deductions	– 2 241	– 1 816	– 4 057	– 10.7
Total Pharmaceuticals gross to net sales adjustments	**– 4 813**	**– 2 595**	**– 7 408**	**– 19.6**
Pharmaceuticals net sales 2015			**30 445**	**80.4**
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**

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 and those further described in Note 1, actual cash flows and values could vary significantly from forecasted future cash flows and related values derived using discounting techniques.

The recoverable amount of cash-generating units and related goodwill is usually based on the fair value less costs of disposal derived from applying discounted future cash flows based on the key assumptions in the following table:

	Pharmaceuticals %	Alcon %	Sandoz %
Cash flows growth rate assumptions after forecast period	1	3	0 to 2
Discount rate (post-tax)	6	6	6

In 2015, intangible asset impairment charges for continuing operations of USD 206 million were recognized, of which USD 120 million were recorded in the Alcon Division and USD 86 million in total in the Pharmaceuticals and Sandoz divisions.

In 2014, intangible asset impairment charges of continuing operations amounted to USD 347 million (USD 302 million in the Pharmaceuticals Division and USD 45 million in total in the Sandoz and Alcon divisions).

In 2015, the reversal of impairment charges recorded in prior years amounted to USD 40 million (2014: USD 70 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 Note 11 to the Group's consolidated financial statements.

Additionally, net impairment charges for property, plant and equipment from continuing operations during 2015 amounted to USD 68 million (2014: USD 44 million).

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. 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. 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.

CONTINGENT CONSIDERATION

In a business combination or divestment of a business, it is necessary to recognize contingent future payments to previous or from new owners representing contractually defined potential amounts as a liability or asset. Usually for Novartis these are linked to milestone or royalty payments related to certain assets and are recognized as a financial liability or asset 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 liabilities 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. Changes in contingent assets are recognized in "Other income and expense". 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.

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".

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 2015, 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 USD 0.8 billion. Similarly, if the 2015 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 USD 22 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 Note 25 to the Group's consolidated financial statements.

CONTINGENCIES

A number of Group companies are involved in various government investigations and legal proceedings (intellectual property, sales and marketing practices, product liability, commer-

cial, employment and wrongful discharge, environmental claims, etc.) arising out of the normal conduct of their businesses. For more information, see Note 20 to the Group's consolidated financial statements.

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 in the absence of an acknowledgement of legal liability. 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 2020. 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 revenues. The amounts to be paid depend on various criteria such as the subsidiary's market share or sales volume compared to certain targets. Considerable judgment is required in estimating these contributions as not all data is available 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 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 USD 200 million for the 2014 pharmaceutical fee levy, as well as the non-tax deductible expense of USD 204 million for the 2013 pharmaceutical fee levy. USD 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 which 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 Note 1 to the Group's consolidated financial statements.

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, 2015.

Factors affecting results of operations

Long-term demographic trends and changing lifestyles are driving increased demand for healthcare around the world, while advances in science and technology are opening new frontiers in patient treatments. In the coming years, these trends 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 are contributing to a rise in life expectancy, increasing the proportion of elderly people worldwide. According to United Nations projections, the number of people over the age of 60 is expected to rise by 500 million, reaching 1.4 billion, by 2030.

The aging of the world's population has contributed to an increase in chronic illnesses that are prevalent among the elderly, such as cancer, heart disease, respiratory ailments, diabetes and eye disease. A global shift toward more sedentary lifestyles is also increasing demand for healthcare. In the last 20 years, obesity rates have doubled among adults and tripled among children.

Novartis has developed new treatments to address some of these growing health threats and we plan to continue research and development activities in these areas.

In 2015, for example, Novartis received approval from the US Food and Drug Administration (FDA) and the European Commission for *Entresto* in chronic heart failure with reduced ejection fraction, which affects more than two million people in the United States and more than five million people in Europe. Regulatory decisions were based on the PARADIGM-HF study, which showed a 20% reduction in cardiovascular deaths versus an ACE inhibitor, the current standard of care in heart failure.

GLOBAL RISE IN HEALTHCARE SPENDING

Increased demand for healthcare around the world has translated into rising healthcare costs. If growth in healthcare spending were to continue at the current pace, global outlays could more than double by 2025 to USD 15 trillion. At the same time, economic uncertainty and tight budgets are prompting many governments, healthcare insurers and consumers to look for ways to moderate spending.

In the context of these trends, we believe that our portfolio spanning pharmaceuticals, generics and eye care, is well-positioned to meet the evolving needs of patients and healthcare systems. For example, the use of generic medicines and biosimilars helps reduce healthcare costs and free up resources for new innovative medicines. Indeed, the global biosimilars market is expected to reach USD 35 billion by 2020 from an estimated USD 1.3 billion in 2013, according to a report by Allied Market Research. Our Sandoz Division is a global leader in biosimilars, with three products on the market in Europe and ten major filings (including etanercept and pegfilgrastim, which were submitted in 2015) planned in the next three years. In 2015, Sandoz became the first company to win approval for a biosimilar in the United States under the pathway created by the Biologics Price Competition and Innovation Act.

SCIENTIFIC ADVANCES OPENING NEW OPPORTUNITIES

As scientific research has become more sophisticated, we have developed a better understanding of the 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 our ability to leverage scientific advances to generate innovative new treatments will enable us to create value over the long-term for society, patients and shareholders.

CONVERGENCE OF HEALTHCARE AND TECHNOLOGY

From molecular diagnostics to clinical trial recruitment to real world data and analytics, technology continues to play an increasingly important role in the pharmaceutical industry. This is attracting new entrants to the sector. For instance, venture funding grew 200% for digital health companies between 2012 and 2014. Established technology companies such as Google are also using their expertise to expand into healthcare.

While new entrants may shift the competitive landscape, the growing role of technology in healthcare presents an opportunity to pharmaceutical companies like Novartis. Google, for example, is collaborating with our Alcon Division to develop an accommodating contact or intraocular lens for people living with presbyopia. Through the collaboration, we are marrying Google's expertise in miniaturized electronics and microfabrication with Alcon's expertise in the physiology of the eye, as well as clinical development and commercialization of contact and intraocular lenses, to advance a product that has the potential to make reading glasses obsolete.

We also formed a joint investment company with Qualcomm Ventures to support early stage companies with technologies, products or services that "go beyond the pill" to benefit physicians and patients. We recognize the potential of technology to enhance our ability to deliver the right medicine to the right patient at the right time, and seek to partner with experts in emerging technologies to build our expertise in these areas.

INCREASINGLY CHALLENGING BUSINESS ENVIRONMENT

PATENT EXPIRATIONS AND PRODUCT COMPETITION

It is common for pharmaceutical companies to face generic erosion when their products lose patent or other intellectual property protection, and Novartis is no exception. The products of our Pharmaceuticals and Alcon Divisions are generally protected by patent or other intellectual property rights, allowing us to exclusively market those products. The loss of exclusivity has had, and will continue to have, an adverse effect on our results. In 2015, the impact of generic competition on our net sales amounted to USD 2.2 billion.

Like other players in the pharmaceutical industry, some of our products have begun to face considerable competition due to the expiration of patent or other intellectual property protection. For example:

- We already face generic competition in Japan and some EU countries for *Gleevec/Glivec*. In the US, we have resolved patent litigation with certain generic manufacturers. We licensed to a subsidiary of Sun Pharmaceutical Industries the right to market a generic version of *Gleevec* in the US as of February 1, 2016. In the EU, our *Glivec* intellectual property rights are also being challenged by generic manufacturers.
- *Diovan* and *Co-Diovan/Diovan HCT*, which had long been our best-selling product, has generic competitors for *Diovan* in the US, EU and Japan and for *Co-Diovan/Diovan HCT* in the US and EU. In Japan, Novartis resolved patent litigation with a generic manufacturer. Patent protection for *Co-Diovan* will expire in Japan in 2016.

To counter the impact of patent expirations, we continuously invest in research and development to rejuvenate our portfolio. For example, in 2015, we invested 18% of total net sales in research and development. One measure of the output of our efforts is the performance of our Growth Products – products launched in a key market (EU, US, Japan) in 2010 or later, or products with exclusivity in key markets until at least 2019 (except Sandoz, which includes only products launched in the last 24 months). These products accounted for 34% of total net sales in 2015, up 17% from the previous year.

Moreover, while 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 is dependent on our ability to bring new products to market. In recent years, health regulators have raised the bar on product innovation. They are increasingly focused on the benefit-risk profile of pharmaceutical products, emphasizing product safety and 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 of trial outcomes. 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 accelerating innovation in areas of unmet medical need and demonstrating real improvement in patient outcomes will allow Novartis to continue to bring effective and safe medicines to market.

INCREASING PRESSURE ON PRICING

Against the backdrop of steadily rising healthcare costs, there has been increased scrutiny on drug pricing by governments, media and consumers. Following the launch of Gilead's Sovaldi® in hepatitis C, media focused on the price tag and lawsuits were filed against the company, alleging price-gouging. In 2015, the pricing debate reached a new level of intensity when Turing Pharmaceuticals acquired the rights to the decades-old medicine Daraprim® and raised the price by 5,000%.

We expect scrutiny on prices to continue in 2016 as political pressures mount and 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.

In this environment, we believe that it is more important than ever to demonstrate the value that true innovation brings to the healthcare system. For example, with our psoriasis medicine *Cosentyx*, we demonstrated superiority to Stelara® in a head-to-head study, but still adopted a similar price for our product. Similarly, with *Entresto*, an independent organization called the Institute for Clinical and Economic Review found that its US list price was "well-aligned with the degree of benefit it brings to patients." Furthermore, we expressed a willingness to work with our customers on flexible, performance-based pricing models, where we would only be fully compensated if the drug succeeded in meeting certain targets, such as reducing heart failure hospitalizations and associated costs.

To manage pricing pressure, we aim to invest in access to real-world data and analytics, explore new technologies and patient management services, and partner with payors to develop and scale outcomes-based commercial models.

POTENTIAL LIABILITY ARISING FROM LEGAL PROCEEDINGS AND GOVERNMENT INVESTIGATIONS

In recent years, there has been a trend of increasing government investigations and litigation against companies operating in our industry, including 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 develop. 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. For example, in 2015, our affiliate Novartis Pharmaceuticals Corporation settled litigation in the Southern District of New York related to its interactions with specialty pharmacies from 2004 to 2013. The settlement included payments totaling USD 390 million plus additional legal expenses to plaintiffs, and an agreement to amend and extend for five years an existing corporate integrity agreement (CIA) with the Office of the Inspector General of the US Department of Health and Human Services. This resolution and the new CIA obligations provide clear guidelines as we continue to work with independent specialty pharmacies in support of patient care.

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, any manufacturing issue compromising supply or quality could have serious consequences for the health of our patients.

Beyond regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials. For example, biologic products, produced from living plant or animal micro-organisms, comprise a significant portion of the portfolio across the Group. 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. There is a greater chance of production failures and supply interruptions for these products.

Given the complexity of our manufacturing processes, we have had a multi-year effort in place to ensure adherence to a single high quality standard across the Group. This effort continued to yield steady improvement in 2015: regulatory agencies carried out 192 inspections of Novartis facilities worldwide last year, with 189 or 98.4% resulting in a good or acceptable outcome, in line with prior year. In addition, in September the FDA closed out the May 2013 Warning Letter issued for our Sandoz site in Unterach, Austria.

Despite this progress, more work remains to be done. In October 2015, the FDA issued a Warning Letter to our Sandoz Division concerning its Indian sites in Kalwe and Turbhe. The letter related to documentation practices in Kalwe and sterile manufacturing practices in Turbhe that were identified during an inspection in August 2014. Novartis took action immediately and has addressed a majority of the issues.

RISK ASSESSMENT DISCLOSURES

The Risk Committee of the Board ensures the Group has implemented an appropriate and effective risk management system and process. It reviews with management and internal audit 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 informs the Board of Directors on a periodic basis.

The Group Risk Office coordinates and aligns the risk management processes, and reports to the Risk Committee on a regular basis on risk assessment and risk management. Organizational and process measures have been designed to identify and mitigate risks at an early stage. Organizationally, the responsibility for risk assessment and management is allocated to the divisions, with specialized Corporate functions such as Group Finance, Group Quality Assurance, Corporate Health, Safety and Environment, Business Continuity Management, Integrity and Compliance and the Business Practices Office providing support and controlling the effectiveness of the risk management by the divisions and functions in these respective areas.

Financial risk management is described in more detail in Note 29 to the Group Consolidated Financial Statements.

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, constant currencies, 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 non-IFRS measures are presented solely to permit investors to more fully understand how the Group's management assesses underlying performance. These non-IFRS measures are not, and should not be viewed as, a substitute for IFRS measures.

As an internal measure of Group performance, these non-IFRS 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 divestments, the integration of acquisitions and restructuring charges that exceed a threshold of USD 25 million, as well as other income and expense items that management deems exceptional and that are or are expected to accumulate within the year to be over a USD 25 million threshold.

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 of business performance 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.

A limitation of the core measures is that they provide a view of the Group's operations without including all events during a period, such as the effects of an acquisition or amortization of purchased intangible assets.

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-USD functional currencies to USD; 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 USD using the average exchange rates from the prior year and comparing them to the prior year values in USD.

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 and 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 reliance on additional borrowing or 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 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. Net debt is presented as additional information because management believes it is a useful supplemental indicator of the Group's ability to pay dividends, to meet financial commitments and to invest in new strategic opportunities, including strengthening its balance sheet.

NOVARTIS CASH VALUE ADDED

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. NCVA is used as the primary internal financial measure for determining payouts under the new Long-Term Performance Plan (LTPP) introduced in 2014. More information on NCVA is presented as part of the Compensation report on page 117.

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 2015 and 2014:

	Year ended Dec 31, 2015 USD millions	Year ended Dec 31, 2014 USD millions	Change in USD %
Operating income from continuing operations	**8 977**	**11 089**	**– 19**
Income from associated companies	266	1 918	– 86
Operating interest	– 298	– 306	3
Operating tax	– 1 937	– 2 565	24
Capital charge	– 6 164	– 5 938	– 4
Novartis Economic Value Added from continuing operations	**844**	**4 198**	**– 80**
Novartis Economic Value Added from discontinued operations	10 808	– 678	nm
Total Novartis Economic Value Added	**11 652**	**3 520**	**231**

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 unadjusted for tax-disallowed items or tax loss carryforwards.

The capital charge is the notional interest charge on the average non-current assets of operations based on an internally calculated weighted average cost of capital for the Group.

The NVA for continuing operations decreased to USD 844 million in 2015 from USD 4.2 billion in the prior-year, mainly on account of the negative currency effect on operating income and lower income from associated companies, which included in the prior year exceptional one-time gains from the sale of the shares of Idenix (USD 0.8 billion) and LTS (USD 0.4 billion).

The NVA for discontinued operations in 2015 was mainly driven by the USD 12.7 billion exceptional pre-tax gains form the portfolio transformation transactions with GSK and Lilly.

ADDITIONAL INFORMATION

EBITDA

Novartis defines earnings before interest, tax, depreciation and amortization (EBITDA) as operating income from continuing operations excluding depreciation of property, plant and equipment (including any related impairment charges) and amortization of intangible assets (including any related impairment charges).

	2015 USD millions	2014 USD millions	Change USD millions
Operating income from continuing operations	**8 977**	**11 089**	**– 2 112**
Depreciation of property, plant & equipment	1 470	1 586	– 116
Amortization of intangible assets	3 755	2 775	980
Impairments of property, plant & equipment and intangible assets	246	321	– 75
EBITDA from continuing operations	**14 448**	**15 771**	**– 1 323**

ENTERPRISE VALUE

Enterprise value represents the total amount that shareholders and debt holders have invested in Novartis, less the Group's liquidity.

	Dec 31, 2015 USD millions	Dec 31, 2014 USD millions	Change USD millions
Market capitalization	208 321	223 728	– 15 407
Non-controlling interests	76	78	– 2
Financial debts and derivatives	21 931	20 411	1 520
Liquidity	– 5 447	– 13 862	8 415
Enterprise value	**224 881**	**230 355**	**– 5 474**
Enterprise value/EBITDA	**16**	**15**	

2015 AND 2014 RECONCILIATION OF GROUP IFRS RESULTS TO GROUP CORE RESULTS

2015	IFRS results USD millions	Amortization of intangible assets[1] USD millions	Impairments[2] USD millions	Acquisition or divestment related items, including restructuring and integration charges[3] USD millions	Other exceptional items[4] USD millions	Core results USD millions
Gross profit from continuing operations	**32 983**	**3 666**	**126**		**125**	**36 900**
Operating income from continuing operations	**8 977**	**3 709**	**369**	**182**	**553**	**13 790**
Income before taxes from continuing operations	**8 134**	**4 132**	**369**	**182**	**1 275**	**14 092**
Taxes from continuing operations[5]	– 1 106					– 2 051
Net income from continuing operations	**7 028**					**12 041**
Income before taxes from discontinued operations[6]	12 479		– 83	– 12 627	8	– 223
Taxes from discontinued operations	– 1 713					– 33
Net income / loss from discontinued operations	**10 766**					**– 256**
Net income	**17 794**					**11 785**
Basic EPS from continuing operations (USD)[7]	**2.92**					**5.01**
Basic EPS from discontinued operations (USD)[7]	4.48					– 0.11
Total basic EPS (USD)[7]	**7.40**					**4.90**
The following are adjustments to arrive at Core Gross Profit from continuing operations						
Other revenues	947				– 28	919
Cost of goods sold	– 17 404	3 666	126		153	– 13 459
The following are adjustments to arrive at Core Operating Income from continuing operations						
Marketing & Sales	– 11 772				43	– 11 729
Research & Development	– 8 935	43	40		114	– 8 738
General & Administration	– 2 475				86	– 2 389
Other income	2 049		– 56	– 283	– 887	823
Other expense	– 2 873		259	465	1 072	– 1 077
The following are adjustments to arrive at Core Income before taxes from continuing operations						
Income from associated companies	266	423			292	981
Other financial income and expense	– 454				430	– 24

[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; Income from associated companies includes USD 423 million for the Novartis share of the estimated Roche core items.

[2] Impairments: Cost of goods sold, Research & Development and Other expense consist principally of net impairment charges or reversals related to intangible assets, property, plant and equipment, and financial assets; Other income includes a reversal of an impairment related to property, plant and equipment.

[3] Acquisition or divestment related items, including restructuring and integration charges: Other income and Other expense include items related to the portfolio transformation.

[4] Other exceptional items: Other revenues and Other income include additional gains from product divestments; Cost of goods sold and Other expense include charges for the Group-wide rationalization of manufacturing sites; Cost of goods sold also includes an inventory write-off; Marketing & Sales, Research & Development and Other expense include other restructuring charges; Research & Development also includes expenses related to product acquisitions; General & Administration includes charges for transforming IT and finance processes and expenses related to setup costs for Novartis Business Services; Other income also includes a gain of USD 110 million from a Swiss pension plan amendment and items related to portfolio transformation; Other expense also includes legal settlement provisions; Income from associated companies includes USD 292 million for the Novartis share of the estimated OTC joint venture core items; Other financial income and expense includes a charge of USD 410m related to Venezuela consisting of foreign exchange losses (USD 211 million) , loss on the sale of PDVSA bonds (USD 127 million) and the monetary loss due to hyperinflation (USD 72 million).

[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 always the case for items arising from legal 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 for continuing operations of USD 6.0 billion to arrive at the core results before tax amounts to USD 945 million. The average tax rate on the adjustments for continuing operations is 15.9%.

[6] Core adjustments on net income before tax of discontinued operations include gains from the divestment of Animal Health (USD 4.6 billion) and from the transactions with GSK (USD 2.8 billion for the non-influenza Vaccines business and USD 5.9 billion resulting from the contribution of the former Novartis OTC Division into the GSK Consumer Healthcare joint venture in exchange for 36.5% interest in this newly created entity), as well as additional transaction-related expenses of USD 0.6 billion and other portfolio transformation-related costs.

[7] Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

2014	IFRS results USD millions	Amortization of intangible assets[1] USD millions	Impairments[2] USD millions	Acquisition or divestment related items, including restructuring and integration charges[3] USD millions	Other exceptional items[4] USD millions	Core results USD millions
Gross profit from continuing operations	**36 289**	**2 692**	**– 21**		**– 139**	**38 821**
Operating income from continuing operations	**11 089**	**2 743**	**433**	**33**	**175**	**14 473**
Income before taxes from continuing operations	**12 272**	**3 000**	**434**	**33**	**– 1 058**	**14 681**
Taxes from continuing operations[5]	– 1 545					– 2 028
Net income from continuing operations	**10 727**					**12 653**
Income before taxes from discontinued operations[6]	– 351	73	1 141	– 680	– 38	145
Taxes from discontinued operations	– 96					– 43
Net income / loss from discontinued operations	**– 447**					**102**
Net income	**10 280**					**12 755**
Basic EPS from continuing operations (USD)[7]	**4.39**					**5.19**
Basic EPS from discontinued operations (USD)[7]	– 0.18					0.04
Total basic EPS (USD)[7]	**4.21**					**5.23**
The following are adjustments to arrive at Core Gross Profit from continuing operations						
Other revenues	1 215				– 302	913
Cost of goods sold	– 17 345	2 692	– 21		163	– 14 511
The following are adjustments to arrive at Core Operating Income from continuing operations						
Marketing & Sales	– 12 377				22	– 12 355
Research & Development	– 9 086	48	298		17	– 8 723
General & Administration	– 2 616				64	– 2 552
Other income	1 391		– 15		– 813	563
Other expense	– 2 512	3	171	33	1 024	– 1 281
The following are adjustments to arrive at Core Income before taxes from continuing operations						
Income from associated companies	1 918	257	1		– 1 233	943

[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 USD 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.

[3] Acquisition or divestment-related items, restructuring and integration charges: Other expense includes costs related to the portfolio transformation.

[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 USD 204 million related to the advancement of the timing of recording the US Healthcare Fee liability as a result of final regulations. Income from associated companies includes gains from the divestment of Idenix and LTS shareholdings.

[5] Taxes on the adjustments between IFRS and core results of continuing operations 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 always the case for items arising from legal 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 USD 2.4 billion to arrive at the core results before tax amounts to USD 483 million. This results in the average tax rate on the adjustments being 20.0 %.

[6] Core adjustments on net income before tax of discontinued operations includes mainly the USD 1.1 billion impairment charge as a result of the sale of the influenza vaccines business and under divestment related core adjustments the USD 0.9 billion gain on the disposal of the blood transfusion diagnostics unit on January 9, 2014, partly offset by divestment-related expense.

[7] Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

2015 AND 2014 RECONCILIATION FROM IFRS RESULTS TO CORE RESULTS – BY SEGMENT

	Pharmaceuticals		Alcon		Sandoz		Corporate		Total Group	
	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions
IFRS Operating income from continuing operations	**7 597**	**8 471**	**794**	**1 597**	**1 005**	**1 088**	**– 419**	**– 67**	**8 977**	**11 089**
Amortization of intangible assets	**1 290**	**276**	**2 063**	**2 064**	**356**	**400**		**3**	**3 709**	**2 743**
Impairments										
Intangible assets	19	231	120	7	27	39			166	277
Property, plant & equipment related to the Group-wide rationalization of manufacturing sites	6	23			83				89	23
Other property, plant & equipment	– 45	– 8	1	– 1	14	7	21	23	– 9	21
Financial assets	32	20				1	91	91	123	112
Total impairment charges	**12**	**266**	**121**	**6**	**124**	**47**	**112**	**114**	**369**	**433**
Acquisition or divestment related items										
- Income	– 22				– 1		– 260		– 283	
- Expense	214	33			1		250		465	33
Total acquisition or divestment related items, net	**192**	**33**					**– 10**		**182**	**33**
Other exceptional items										
Exceptional divestment gains	– 626	– 237					– 54	– 294	– 680	– 531
Restructuring items										
- Income	– 27	– 56	– 7	– 24		– 3	– 5		– 39	– 83
- Expense	391	632	60	95	121	21	57	1	629	749
Legal-related items										
- Expense	578	125	4		40		– 30	30	592	155
Additional exceptional income	– 119	– 158	– 5	– 29	– 2		– 68	– 315	– 194	– 502
Additional exceptional expense	132	162	33	102	15	18	65	105	245	387
Total other exceptional items	**329**	**468**	**85**	**144**	**174**	**36**	**– 35**	**– 473**	**553**	**175**
Total adjustments	**1 823**	**1 043**	**2 269**	**2 214**	**654**	**483**	**67**	**– 356**	**4 813**	**3 384**
Core operating income from continuing operations	**9 420**	**9 514**	**3 063**	**3 811**	**1 659**	**1 571**	**– 352**	**– 423**	**13 790**	**14 473**
as % of net sales	**30.9**	**29.9**	**31.2**	**35.2**	**18.1**	**16.4**			**27.9**	**27.7**
Income from associated companies		812			2	4	264	1 102	266	1 918
Core adjustments to income from associated companies, net of tax		– 812					715	– 163	715	– 975
Interest expense									– 655	– 704
Other financial income and expense [1]									– 24	– 31
Taxes (adjusted for above items)									– 2 051	– 2 028
Core net income from continuing operations									**12 041**	**12 653**
Core net income from discontinued operations [2]									– 256	102
Core net income									**11 785**	**12 755**
Core net income attributable to shareholders									11 774	12 685
Core basic EPS from continuing operations (USD) [3]									**5.01**	**5.19**
Core basic EPS from discontinued operations (USD) [3]									– 0.11	0.04
Total core basic EPS (USD) [3]									**4.90**	**5.23**

[1] Adjustments for charges of USD 0.4 billion are related to Venezuela subsidiaries.
[2] For details on discontinued operations reconciliation from IFRS to core net income, please refer to page 167 and 168.
[3] Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

SUMMARY OF QUARTERLY AND GROUP FINANCIAL DATA

SUMMARY OF QUARTERLY FINANCIAL DATA FOR 2015 AND 2014

USD millions unless indicated otherwise	Q1	Q2	Q3	Q4	2015	Q1	Q2	Q3	Q4	2014
Net sales to third parties from continuing operations	**11 935**	**12 694**	**12 265**	**12 520**	**49 414**	**12 767**	**13 347**	**12 991**	**13 075**	**52 180**
Sales to discontinued operations	26	0	0	0	26	65	64	55	55	239
Net sales from continuing operations	**11 961**	**12 694**	**12 265**	**12 520**	**49 440**	**12 832**	**13 411**	**13 046**	**13 130**	**52 419**
Other revenues	241	202	220	284	947	199	538	254	224	1 215
Cost of goods sold	– 3 980	– 4 487	– 4 388	– 4 549	– 17 404	– 4 130	– 4 378	– 4 421	– 4 416	– 17 345
Gross profit	**8 222**	**8 409**	**8 097**	**8 255**	**32 983**	**8 901**	**9 571**	**8 879**	**8 938**	**36 289**
Marketing & Sales	– 2 691	– 3 016	– 2 890	– 3 175	– 11 772	– 2 988	– 3 188	– 2 972	– 3 229	– 12 377
Research & Development	– 2 067	– 2 206	– 2 190	– 2 472	– 8 935	– 2 210	– 2 178	– 2 161	– 2 537	– 9 086
General & Administration	– 591	– 601	– 573	– 710	– 2 475	– 649	– 638	– 593	– 736	– 2 616
Other income	414	357	682	596	2 049	236	207	342	606	1 391
Other expense	– 502	– 662	– 892	– 817	– 2 873	– 475	– 590	– 756	– 691	– 2 512
Operating income from continuing operations	**2 785**	**2 281**	**2 234**	**1 677**	**8 977**	**2 815**	**3 184**	**2 739**	**2 351**	**11 089**
Income from associated companies	15	121	120	10	266	215	185	938	580	1 918
Interest expense	– 179	– 164	– 154	– 158	– 655	– 168	– 166	– 182	– 188	– 704
Other financial income and expense	57	– 82	– 31	– 398	– 454	– 25	– 56	37	13	– 31
Income before taxes from continuing operations	**2 678**	**2 156**	**2 169**	**1 131**	**8 134**	**2 837**	**3 147**	**3 532**	**2 756**	**12 272**
Taxes	– 372	– 300	– 357	– 77	– 1 106	– 383	– 424	– 430	– 308	– 1 545
Net income from continuing operations	**2 306**	**1 856**	**1 812**	**1 054**	**7 028**	**2 454**	**2 723**	**3 102**	**2 448**	**10 727**
Net income/loss from discontinued operations	10 699	– 18	83	2	10 766	514	– 138	138	– 961	– 447
Net income	**13 005**	**1 838**	**1 895**	**1 056**	**17 794**	**2 968**	**2 585**	**3 240**	**1 487**	**10 280**
Attributable to:										
Shareholders of Novartis AG	*13 005*	*1 836*	*1 888*	*1 054*	*17 783*	*2 941*	*2 555*	*3 223*	*1 491*	*10 210*
Non-controlling interests		2	7	2	11	27	30	17	– 4	70
Basic earnings per share (USD) from continuing operations	*0.96*	*0.77*	*0.75*	*0.44*	*2.92*	*0.99*	*1.11*	*1.27*	*1.02*	*4.39*
Basic earnings per share (USD) from discontinued opeations	*4.44*	*– 0.01*	*0.04*	*0.00*	*4.48*	*0.22*	*– 0.06*	*0.06*	*– 0.40*	*– 0.18*
Total basic earnings per share (USD)	*5.40*	*0.76*	*0.79*	*0.44*	*7.40*	*1.21*	*1.05*	*1.33*	*0.62*	*4.21*
Net sales to third parties by segment										
Pharmaceuticals	**7 140**	**7 847**	**7 593**	**7 865**	**30 445**	**7 807**	**8 199**	**7 925**	**7 860**	**31 791**
Alcon	**2 558**	**2 559**	**2 346**	**2 349**	**9 812**	**2 642**	**2 817**	**2 665**	**2 703**	**10 827**
Sandoz	**2 237**	**2 288**	**2 326**	**2 306**	**9 157**	**2 318**	**2 331**	**2 401**	**2 512**	**9 562**
Net sales to third parties from continuing operations	**11 935**	**12 694**	**12 265**	**12 520**	**49 414**	**12 767**	**13 347**	**12 991**	**13 075**	**52 180**
Operating income by segment										
Pharmaceuticals	**2 299**	**1 986**	**1 841**	**1 471**	**7 597**	**2 221**	**2 406**	**2 233**	**1 611**	**8 471**
Alcon	**353**	**150**	**159**	**132**	**794**	**380**	**471**	**381**	**365**	**1 597**
Sandoz	**279**	**193**	**317**	**216**	**1 005**	**282**	**244**	**272**	**290**	**1 088**
Corporate	– 146	– 48	– 83	– 142	– 419	– 68	63	– 147	85	– 67
Operating income from continuing operations	**2 785**	**2 281**	**2 234**	**1 677**	**8 977**	**2 815**	**3 184**	**2 739**	**2 351**	**11 089**
Core operating income from continuing operations	**3 651**	**3 593**	**3 489**	**3 057**	**13 790**	**3 800**	**3 859**	**3 585**	**3 229**	**14 473**
Core net income from continuing operations	**3 199**	**3 074**	**3 061**	**2 707**	**12 041**	**3 333**	**3 335**	**3 128**	**2 857**	**12 653**
Core basic EPS (USD) from continuing operations	*1.33*	*1.27*	*1.27*	*1.14*	*5.01*	*1.35*	*1.36*	*1.28*	*1.19*	*5.19*

SUMMARY OF GROUP FINANCIAL DATA 2011–2015

USD millions unless indicated otherwise		2015	2014	2013	2012	2011
Net sales to third parties from continuing operations		**49 414**	**52 180**	**51 869**	**51 080**	**51 939**
Change relative to preceding year	%	– 5.3	0.6	1.5	– 1.7	8.4
Pharmaceuticals net sales		30 445	31 791	32 214	32 153	32 508
Change relative to preceding year	%	– 4.2	– 1.3	0.2	– 1.1	7.3
Alcon net sales		9 812	10 827	10 496	10 225	9 958
Change relative to preceding year	%	– 9.4	3.2	2.7	2.7	10.3
Sandoz net sales		9 157	9 562	9 159	8 702	9 473
Change relative to preceding year	%	– 4.2	4.4	5.3	– 8.1	10.3
Operating income from continuing operations		**8 977**	**11 089**	**10 983**	**11 507**	**10 293**
Change relative to preceding year	%	– 19.0	1.0	– 4.6	11.8	1.4
As a % of net sales	%	18.2	21.3	21.2	22.5	19.8
As a % of average equity	%	12.1	15.3	15.3	17.0	15.2
As a % of average net operating assets	%	10.5	13.8	13.4	14.2	12.4
Net income from continuing operations		**7 028**	**10 727**	**9 309**	**9 530**	**8 685**
Change relative to preceding year	%	– 34.5	15.2	– 2.3	9.7	– 4.1
As a % of net sales	%	14.2	20.6	17.9	18.7	16.7
As a % of average equity	%	9.5	14.8	13.0	14.1	12.8
Net income/loss from discontinued operations		10 766	– 447	– 17	– 147	387
Net income		**17 794**	**10 280**	**9 292**	**9 383**	**9 072**
As a % of average equity	%	24.1	14.1	12.9	13.9	13.4
Dividends of Novartis AG[1]		**6 550**	**6 643**	**6 810**	**6 100**	**6 030**
As % of net income from continuing operations[2]	%	93	62	74	65	70
As % of net income[2]	%	37	65	74	66	67
Cash flows from operating activities from continuing operations		**12 085**	**13 898**	**12 617**	**13 810**	**13 613**
Change relative to preceding year	%	– 13.0	10.2	– 8.6	1.4	13.5
As a % of net sales	%	24.5	26.6	24.3	27.0	26.2
Cash flows from operating activities		**11 897**	**13 897**	**13 174**	**14 194**	**14 309**
Free cash flow from continuing operations		**9 259**	**10 934**	**9 521**	**11 251**	**12 004**
Change relative to preceding year	%	– 15.3	14.8	– 15.4	– 6.3	14.3
As a % of net sales	%	18.7	21.0	18.4	22.0	23.1
Free cash flow		**9 029**	**10 762**	**9 945**	**11 383**	**12 503**
Purchase of property, plant & equipment[3]		**2 367**	**2 624**	**2 903**	**2 458**	**1 913**
Change relative to preceding year	%	– 9.8	– 9.6	18.1	28.5	36.6
As a % of net sales	%	4.8	5.0	5.6	4.8	3.7
Depreciation of property, plant & equipment[3]		**1 470**	**1 586**	**1 554**	**1 517**	**1 559**
As a % of net sales	%	3.0	3.0	3.0	3.0	3.0
Core Research & Development[3]		**8 738**	**8 723**	**8 885**	**8 396**	**8 453**
As a % of net sales	%	17.7	16.7	17.1	16.4	16.3
Core Pharmaceuticals Division Research & Development		**7 053**	**6 997**	**7 161**	**6 697**	**6 860**
As a % of Pharmaceuticals Division net sales	%	23.2	22.0	22.2	20.8	21.1
Total assets		**131 556**	**125 387**	**126 254**	**124 191**	**117 468**
Liquidity		5 447	13 862	9 222	8 119	5 075
Equity		77 122	70 844	74 472	69 263	65 989
Debt/equity ratio		0.28:1	0.29:1	0.24:1	0.28:1	0.31:1
Current ratio		0.96:1	1.39:1	1.16:1	1.16:1	1.04:1
Net operating assets		**93 606**	**77 393**	**83 268**	**80 870**	**81 143**
Change relative to preceding year	%	20.9	– 7.1	3.0	– 0.3	– 4.1
As a % of net sales	%	189.4	148.3	160.5	158.3	156.2
Personnel costs[3, 4]		**13 540**	**14 569**	**13 760**	**13 127**	**13 246**
As a % of net sales	%	27.4	27.9	26.5	25.7	25.5
Full-time equivalent associates at year-end[3, 4]		**118 700**	**117 809**	**119 362**	**112 461**	**109 208**
Net sales per full-time equivalent associate (average)[3]	USD	417 861	440 020	447 488	460 867	482 151

[1] 2015 dividend: Proposal for shareholder approval at the Annual General Meeting on February 23, 2016. In all years, this figure reflects only amounts paid to third-party shareholders of Novartis AG.
[2] Based on net income attributable to the shareholders of Novartis AG.
[3] Continuing operations
[4] Own employees
nm = not meaningful

NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED INCOME STATEMENTS

(For the years ended December 31, 2015 and 2014)

	Note	2015 USD millions	2014 USD millions
Net sales to third parties from continuing operations	3	**49 414**	**52 180**
Sales to discontinued segments		26	239
Net sales from continuing operations	3	**49 440**	**52 419**
Other revenues		947	1 215
Cost of goods sold		– 17 404	– 17 345
Gross profit from continuing operations		**32 983**	**36 289**
Marketing & Sales		– 11 772	– 12 377
Research & Development		– 8 935	– 9 086
General & Administration		– 2 475	– 2 616
Other income		2 049	1 391
Other expense		– 2 873	– 2 512
Operating income from continuing operations	3	**8 977**	**11 089**
Income from associated companies	4	266	1 918
Interest expense	5	– 655	– 704
Other financial income and expense	5	– 454	– 31
Income before taxes from continuing operations		**8 134**	**12 272**
Taxes	6	– 1 106	– 1 545
Net income from continuing operations		**7 028**	**10 727**
Net income/loss from discontinued operations	30	10 766	– 447
Net income		**17 794**	**10 280**
Attributable to:			
Shareholders of Novartis AG		*17 783*	*10 210*
Non-controlling interests		*11*	*70*
Basic earnings per share (USD) from continuing operations		2.92	4.39
Basic earnings per share (USD) from discontinued operations		4.48	– 0.18
Total basic earnings per share (USD)	**7**	**7.40**	**4.21**
Diluted earnings per share (USD) from continuing operations		2.88	4.31
Diluted earnings per share (USD) from discontinued operations		4.41	– 0.18
Total diluted earnings per share (USD)	**7**	**7.29**	**4.13**

The accompanying Notes form an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(For the years ended December 31, 2015 and 2014)

	Note	2015 USD millions	2014 USD millions
Net income		**17 794**	**10 280**
Other comprehensive income to be eventually recycled into the consolidated income statement:			
Fair value adjustments on marketable securities, net of taxes	8.1	28	89
Fair value adjustments on deferred cash flow hedges, net of taxes	8.1	20	21
Total fair value adjustments on financial instruments, net of taxes	8.1	48	110
Novartis share of other items recorded in comprehensive income recognized by associated companies, net of taxes	8.2	– 48	– 5
Currency translation effects	8.3	– 1 662	– 2 220
Total of items to eventually recycle		– 1 662	– 2 115
Other comprehensive income never to be recycled into the consolidated income statement:			
Actuarial losses from defined benefit plans, net of taxes	8.4	– 147	– 822
Total comprehensive income		**15 985**	**7 343**
Attributable to:			
Shareholders of Novartis AG		*15 977*	*7 274*
Continuing operations		*5 238*	*7 820*
Discontinued operations		*10 739*	*– 546*
Non-controlling interests		*8*	*69*

The accompanying Notes form an integral part of the consolidated financial statements.

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(For the years ended December 31, 2015 and 2014)

	Note	Share capital USD millions	Treasury shares USD millions	Retained earnings USD millions	Total value adjustments USD millions	Issued share capital and reserves attributable to Novartis shareholders USD millions	Non-controlling interests USD millions	Total equity USD millions
Total equity at January 1, 2014		**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
Increase of Treasury share repurchase obligation under a share buy-back trading plan	9.4			– 658		– 658		– 658
Increase in equity from exercise of options and employee transactions	9.5		23	2 377		2 400		2 400
Equity-based compensation	9.6		6	1 137		1 143		1 143
Changes in non-controlling interests	9.7						– 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**
Net income				17 783		17 783	11	17 794
Other comprehensive income	8			– 48	– 1 758	– 1 806	– 3	– 1 809
Total comprehensive income				**17 735**	**– 1 758**	**15 977**	**8**	**15 985**
Dividends	9.1			– 6 643		– 6 643		– 6 643
Purchase of treasury shares	9.2		– 33	– 6 086		– 6 119		– 6 119
Reduction of share capital	9.3	– 10	15	– 5				
Decrease of treasury share repurchase obligation under a share buy-back trading plan	9.4			658		658		658
Increase in equity from exercise of options and employee transactions	9.5		14	1 578		1 592		1 592
Equity-based compensation	9.6		6	809		815		815
Changes in non-controlling interests	9.7						– 10	– 10
Fair value adjustments related to divestments	8			– 100	100			
Total of other equity movements		**– 10**	**2**	**– 9 789**	**100**	**– 9 697**	**– 10**	**– 9 707**
Total equity at December 31, 2015		**991**	**– 101**	**80 379**	**– 4 223**	**77 046**	**76**	**77 122**

The accompanying Notes form an integral part of the consolidated financial statements.

CONSOLIDATED BALANCE SHEETS

(At December 31, 2015 and 2014)

	Note	2015 USD millions	2014 USD millions
Assets			
Non-current assets			
Property, plant & equipment	10	15 982	15 983
Goodwill	11	31 174	29 311
Intangible assets other than goodwill	11	34 217	23 832
Investments in associated companies	4	15 314	8 432
Deferred tax assets	12	8 957	7 994
Financial assets	13	2 466	1 720
Other non-current assets	13	601	554
Total non-current assets related to continuing operations		**108 711**	**87 826**
Current assets			
Inventories	14	6 226	6 093
Trade receivables	15	8 180	8 275
Marketable securities, commodities, time deposits and derivative financial instruments	16	773	839
Cash and cash equivalents	16	4 674	13 023
Other current assets	17	2 992	2 530
Total current assets related to continuing operations		**22 845**	**30 760**
Assets related to discontinued operations	30	0	6 801
Total current assets		**22 845**	**37 561**
Total assets		**131 556**	**125 387**
Equity and liabilities			
Equity			
Share capital	18	991	1 001
Treasury shares	18	– 101	– 103
Reserves		76 156	69 868
Issued share capital and reserves attributable to Novartis AG shareholders		**77 046**	**70 766**
Non-controlling interests		76	78
Total equity		**77 122**	**70 844**
Liabilities			
Non-current liabilities			
Financial debts	19	16 327	13 799
Deferred tax liabilities	12	6 355	6 099
Provisions and other non-current liabilities	20	8 044	7 672
Total non-current liabilities related to continuing operations		**30 726**	**27 570**
Current liabilities			
Trade payables		5 668	5 419
Financial debts and derivative financial instruments	21	5 604	6 612
Current income tax liabilities		1 717	2 076
Provisions and other current liabilities	22	10 719	10 448
Total current liabilities related to continuing operations		**23 708**	**24 555**
Liabilities related to discontinued operations	30	0	2 418
Total current liabilities		**23 708**	**26 973**
Total liabilities		**54 434**	**54 543**
Total equity and liabilities		**131 556**	**125 387**

The accompanying Notes form an integral part of the consolidated financial statements.

CONSOLIDATED CASH FLOW STATEMENTS

(For the years ended December 31, 2015 and 2014)

	Note	2015 USD millions	2014 USD millions
Net income from continuing operations		**7 028**	**10 727**
Reversal of non-cash items	23.1	9 070	6 725
Dividends received from associated companies and others		432	479
Interest received		34	35
Interest paid		– 646	– 668
Other financial receipts		714	553
Other financial payments		– 23	– 24
Taxes paid [1]		– 2 454	– 2 179
Cash flows before working capital and provision changes from continuing operations		**14 155**	**15 648**
Payments out of provisions and other net cash movements in non-current liabilities		– 1 207	– 1 125
Change in net current assets and other operating cash flow items	23.2	– 863	– 625
Cash flows from operating activities from continuing operations		**12 085**	**13 898**
Cash flows used in operating activities from discontinued operations [1]		– 188	– 1
Total cash flows from operating activities		**11 897**	**13 897**
Purchase of property, plant & equipment		– 2 367	– 2 624
Proceeds from sales of property, plant & equipment		237	60
Purchase of intangible assets		– 1 138	– 780
Proceeds from sales of intangible assets		621	246
Purchase of financial assets		– 264	– 239
Proceeds from sales of financial assets		166	431
Purchase of other non-current assets		– 82	– 60
Proceeds from sales of other non-current assets		1	2
Divestments/acquisitions of interests in associated companies			1 370
Acquisitions of businesses	23.3	– 16 507	– 331
Purchase of marketable securities and commodities		– 595	– 169
Proceeds from sales of marketable securities and commodities		262	2 086
Cash flows used in investing activities from continuing operations		**– 19 666**	**– 8**
Cash flows from investing activities from discontinued operations [1]	23.4	8 882	889
Total cash flows used in/from investing activities		**– 10 784**	**881**
Dividends paid to shareholders of Novartis AG		– 6 643	– 6 810
Acquisition of treasury shares		– 6 071	– 6 915
Proceeds from exercise options and other treasury share transactions		1 581	2 400
Increase in non-current financial debts		4 596	6 024
Repayment of non-current financial debts		– 3 086	– 2 599
Change in current financial debts		451	– 107
Dividends paid to non-controlling interests and other financing cash flows		– 4	– 140
Cash flows used in financing activities		**– 9 176**	**– 8 147**
Net effect of currency translation on cash and cash equivalents		– 286	– 295
Net change in cash and cash equivalents		**– 8 349**	**6 336**
Cash and cash equivalents at January 1		13 023	6 687
Cash and cash equivalents at December 31		**4 674**	**13 023**

The accompanying Notes form an integral part of the consolidated financial statements.

[1] In 2015, the total tax payment amounted to USD 3.3 billion (2014: USD 2.6 billion) of which a refund of USD 94 million (2014: payment of USD 7 million) was included in the cash flows used in operating activities of discontinued operations and a USD 965 million payment (2014: USD 459 million) in the cash flows from investing activities of discontinued operations.

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 and also including eye care products and cost saving generic 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.

The contribution of a business to an associate or joint venture is accounted for by applying the option under IFRS that permits the accounting for the retained interest of the business contributed at its net book value at the time of the contribution.

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 (USD). 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 USD 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 USD as their functional currency are translated into USD 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.
- 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 USD.

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. The related depreciation expense is included in the costs of the functions using the asset.

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 useful life.

1. Significant Accounting Policies (Continued)

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 groups of 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.

INTANGIBLE ASSETS AVAILABLE FOR USE

Novartis has the following classes of available-for-use intangible assets: 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 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 would be applied, net present value techniques would be applied using pre-tax cash flows and discount rates.

Fair value less costs of disposal 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 or other intellectual property rights 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 cash flow projections usually in line with or lower than inflation rates for later periods. Probability-weighted scenarios are typically used.

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 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 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" 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

1. Significant Accounting Policies (Continued)

"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.

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 or divestment of a business, it is necessary to recognize contingent future payments to previous or from new owners representing contractually defined potential amounts as a liability or asset. Usually for Novartis, these are linked to milestone or royalty payments related to certain assets and are recognized as a financial liability or asset 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 liabilities 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. Changes in contingent assets are recognized in "Other income" or "Other expense". 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.

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.

Provisions for rebates and discounts granted to government agencies, wholesalers, retail pharmacies, managed healthcare organizations and other customers are recorded as a deduction from 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 revenue deduction 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 and Novartis can reasonably estimate expected future returns, a provision is recorded for estimated sales returns. In doing so the estimated rate of return is applied, determined based on historical experience of customer returns and 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 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

1. Significant Accounting Policies (Continued)

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, 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 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. 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 straight-line in the consolidated income statement over their useful life. Other acquired technologies included in intangible assets are amortized straight-line 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.

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 are 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.

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 DISCONTINUED OPERATIONS

Non-current assets are classified as assets held for sale or related to discontinued 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 standards and interpretations which are effective for the financial year beginning on January 1, 2015 did not have a material impact on the Group's consolidated financial statements.

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, 2018 with earlier adoption permitted. The Group is currently assessing the impact of adopting IFRS 15.
- IFRS 16 *Leases* substantially changes the financial statements as the majority of leases will become on-balance sheet liabilities with corresponding right of use assets on the balance sheet. The standard replaces IAS 17 *Leases* and is effective January 1, 2019. Early application is permitted for companies that also apply IFRS 15 *Revenue from Contracts with Customers.* The Group is currently assessing the impact of adopting IFRS 16.

There are no other IFRS standards or interpretations which are not yet effective which would be expected to have a material impact on the Group.

2. Significant Transactions

SIGNIFICANT TRANSACTIONS IN 2015

PORTFOLIO TRANSFORMATION TRANSACTIONS

Transaction with Eli Lilly and Company

On January 1, 2015, Novartis closed its transaction with Eli Lilly and Company, USA (Lilly) announced in April 2014 to divest its Animal Health business for USD 5.4 billion in cash. This resulted in a pre-tax gain of USD 4.6 billion which is recorded in operating income from discontinued operations.

Transactions with GlaxoSmithKline plc

On March 2, 2015, Novartis closed its transactions with GlaxoSmithKline plc, Great Britain (GSK) announced in April 2014, with the following consequences:

Pharmaceuticals – Acquisition of GSK oncology products

Novartis acquired GSK's oncology products and certain related assets for an aggregate cash consideration of USD 16.0 billion. Up to USD 1.5 billion of this cash consideration at the acquisition date is contingent on certain development milestones. The fair value of this potentially refundable consideration is USD 0.1 billion. In addition, under the terms of the agreement, Novartis is 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. The purchase price allocation of the fair value of the consideration of USD 15.9 billion resulted in net identified assets of USD 13.5 billion and goodwill of USD 2.4 billion. Since the acquisition the business generated net sales of USD 1.8 billion. Management estimates net sales for the entire year 2015 would have amounted to USD 2.1 billion had the Oncology products been acquired at the beginning of the 2015 reporting period. The net results from operations on a reported basis since the acquisition date were not material.

Vaccines – Divestment

Novartis has divested its Vaccines business (excluding its Vaccines influenza business) to GSK for up to USD 7.1 billion plus royalties. The USD 7.1 billion consists of USD 5.25 billion paid at closing and up to USD 1.8 billion in future milestone payments. The fair value of the contingent future milestones and royalties is USD 1.0 billion, resulting in a fair value of consideration received of USD 6.25 billion. Included in this amount, is a USD 450 million milestone payment received in late March 2015. The sale of this business resulted in a pre-tax gain of USD 2.8 billion which is recorded in operating income from discontinued operations.

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 could have unilaterally required GSK to acquire the entire or certain parts of its Vaccines influenza business for consideration of up to USD 250 million (the Influenza Put Option) if the divestment to CSL Limited, Australia (CSL), discussed below, had not been completed. The option period was 18 months from the closing date of the GSK transaction, but terminated with the sale of the Vaccines influenza business to CSL on July 31, 2015. Novartis paid GSK a fee of USD 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. On March 2, 2015, a new entity was formed via contribution of businesses from both Novartis and GSK. Novartis has a 36.5% interest in the newly created entity. Novartis has valued the contribution of 63.5% of its OTC Division in exchange for 36.5% of the GSK Consumer Healthcare business at fair value. Based on the estimates of fair values exchanged, an investment in an associated company of USD 7.6 billion was recorded. The resulting pre-tax gain, net of transaction related costs, of USD 5.9 billion is recorded in operating income from discontinued operations.

Novartis has four of eleven seats on the joint venture entity's Board of Directors. Furthermore, Novartis has customary minority rights and also exit rights at a pre-defined, market based pricing mechanism.

The investment is accounted for using the equity method of accounting using estimated results for the last quarter of the year. Any differences between this estimate and actual results, when available, will be adjusted in the Group's 2016 consolidated financial statements.

Additional GSK related costs

The GSK transaction resulted in USD 0.6 billion of additional transaction-related costs that were expensed.

Transaction with CSL

On October 26, 2014, Novartis entered into an agreement with CSL to sell its Vaccines influenza business to CSL for USD 275 million. Entering into the separate divestment agreement with CSL resulted in the Vaccines influenza business being classified as a separate disposal group consisting of a group of cash generating units within the Vaccines Division, requiring the performance of a separate valuation of the Vaccines influenza business net assets. This triggered the recognition of an exceptional impairment charge in 2014 of USD 1.1 billion as the estimated net book value of the Vaccines influenza business net assets was above the USD 275 million consideration. The transaction with CSL was completed on July 31, 2015, resulting in a partial reversal of the impairment recorded in 2014 in the amount of USD 0.1 billion, which is included in operating income from discontinued operations.

OTHER SIGNIFICANT TRANSACTIONS IN 2015

Pharmaceuticals – Acquisition of Spinifex Pharmaceuticals, Inc.

On June 29, 2015 Novartis entered into an agreement to acquire Spinifex Pharmaceuticals, Inc. (Spinifex), a US and Austra-

lian-based, privately held development stage company, focused on developing a peripheral approach to treat neuropathic pain. The transaction closed on July 24, 2015, and the total purchase consideration was USD 312 million. The amount consisted of an initial cash payment of USD 196 million and the net present value of the contingent consideration of USD 116 million due to previous Spinifex shareholders, which they are eligible to receive upon achievement of specified development and commercialization milestones. The purchase price allocation resulted in net identifiable assets of USD 263 million and goodwill of USD 49 million. Results of operations since the date of acquisition were not material.

Pharmaceuticals – Acquisition of Admune Therapeutics LLC

On October 16, 2015, Novartis acquired Admune Therapeutics LLC (Admune), a US-based, privately held company, broadening Novartis' pipeline of cancer immunotherapies. The total purchase consideration amounted to USD 258 million. This amount consists of an initial cash payment of USD 140 million and the net present value of the contingent consideration of USD 118 million due to Admune's previous owners, which they are eligible to receive upon the achievement of specified development and commercialization milestones. The purchase price allocation resulted in net identifiable assets of USD 258 million. No goodwill was recognized. Results of operations since the date of acquisition were not material.

SIGNIFICANT TRANSACTIONS 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 USD 1.7 billion in cash. The pre-tax gain on this transaction was approximately USD 0.9 billion and was recorded in operating income from discontinued 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 USD 248 million (excluding cash acquired). This amount consists of an initial cash payment and the net present value of contingent consideration of USD 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 USD 152 million (excluding cash acquired) and goodwill of USD 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 USD 0.8 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 USD 350 million in cash. The purchase price allocation resulted in net identified assets of USD 180 million and goodwill of USD 170 million. Results of operations since the date of acquisition were not material.

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 USD 0.4 billion which was recorded in income from associated companies.

3. Segmentation of Key Figures 2015 and 2014

The businesses of Novartis are divided operationally on a worldwide basis into three 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. The reporting segments are managed separately because they each research, develop, manufacture, distribute, and sell distinct products that require differing marketing strategies.

The Executive Committee of Novartis is responsible for allocating resources and assessing the performance of the reporting segments.

The reporting segments are as follows:

Pharmaceuticals researches, develops, manufactures, distributes and sells patented prescription medicines. The Pharmaceuticals Division is organized into global business franchises responsible for the commercialization of various products. These franchises are: Oncology, Neuroscience, Retina, Immunology and Dermatology, Respiratory, Cardio-Metabolic, Established Medicines and Cell and Gene Therapies.

Alcon researches, discovers, develops, manufactures, distributes and sells eye care products. The Alcon Division is the global leader in eye care with product offerings in surgical, ophthalmic pharmaceuticals and vision care. The Alcon Division is organized globally in three global business fran-

3. Segmentation of Key Figures 2015 and 2014 (Continued)

chises as follows: 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 active substances, which are not protected by valid and enforceable third-party patents. The Sandoz Division 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 cardiovascular, metabolism, central nervous system, pain, gastrointestinal, and hormonal therapies. Finished dosage form anti-infectives sold to third parties are also part of Retail Generics. 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 and provides biotechnology manufacturing services to other companies. In Oncology Injectables, Sandoz develops, manufactures and markets cytotoxic products for the hospital market.

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. 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.

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

— The Novartis Institutes for BioMedical Research (NIBR) was created in 2003, and is headquartered in Cambridge, Massachusetts. NIBR conducts the Pharmaceuticals and Alcon divisions research activities.
— Novartis Business Services (NBS) was created in July 2014 and started operations in January 2015 as a shared services organization providing business support services across the Group such as information technology, real estate and facility services, procurement, product lifecycle services, human resources and financial reporting and accounting operations.

Following the Portfolio Transformation transactions described in Note 2, Novartis has separated the Group's reported financial data for the current and prior year into "continuing" operations and "discontinued" operations:

Continuing operations comprise:

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

Discontinued operations comprise:

— Vaccines: Preventive human vaccines and the blood transfusion diagnostics unit. Excluded are certain intellectual property rights and related other revenues of the Vaccines Division which are now reported under Corporate activities.
— Consumer Health: OTC (over-the-counter medicines) and Animal Health. These two divisions were managed separately. However, neither was material enough to the Group to be disclosed separately as a reporting segment.
— Corporate: certain transactional and other expenses related to the portfolio transformation.

The accounting policies mentioned in Note 1 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.

SEGMENTATION – CONSOLIDATED INCOME STATEMENTS

	Pharmaceuticals		Alcon		Sandoz		Corporate (including eliminations)		Group	
(USD millions)	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014
Net sales to third parties from continuing operations	**30 445**	**31 791**	**9 812**	**10 827**	**9 157**	**9 562**			**49 414**	**52 180**
Sales to other segments	137	262	45	49	128	286	– 284	– 358	26	239
Net sales from continuing operations	**30 582**	**32 053**	**9 857**	**10 876**	**9 285**	**9 848**	**– 284**	**– 358**	**49 440**	**52 419**
Other revenues	790	629	25	34	25	12	107	540	947	1 215
Cost of goods sold	– 7 379	– 6 889	– 5 153	– 5 193	– 5 325	– 5 751	453	488	– 17 404	– 17 345
Gross profit from continuing operations	**23 993**	**25 793**	**4 729**	**5 717**	**3 985**	**4 109**	**276**	**670**	**32 983**	**36 289**
Marketing & Sales	– 7 789	– 8 178	– 2 398	– 2 474	– 1 585	– 1 725			– 11 772	– 12 377
Research & Development	– 7 232	– 7 331	– 926	– 928	– 777	– 827			– 8 935	– 9 086
General & Administration	– 937	– 1 009	– 544	– 613	– 346	– 376	– 648	– 618	– 2 475	– 2 616
Other income	1 145	734	58	79	109	97	737	481	2 049	1 391
Other expense	– 1 583	– 1 538	– 125	– 184	– 381	– 190	– 784	– 600	– 2 873	– 2 512
Operating income from continuing operations	**7 597**	**8 471**	**794**	**1 597**	**1 005**	**1 088**	**– 419**	**– 67**	**8 977**	**11 089**
Income from associated companies		812			2	4	264	1 102	266	1 918
Interest expense									– 655	– 704
Other financial income and expense									– 454	– 31
Income before taxes from continuing operations									**8 134**	**12 272**
Taxes									– 1 106	– 1 545
Net income from continuing operations									**7 028**	**10 727**
Net income/loss from discontinued operations									10 766	– 447
Net income									**17 794**	**10 280**
Attributable to:										
Shareholders of Novartis AG									*17 783*	*10 210*
Non-controlling interests									*11*	*70*
Included in net income from continuing operations are:										
Interest income									33	33
Depreciation of property, plant & equipment	– 796	– 856	– 280	– 307	– 277	– 317	– 117	– 106	– 1 470	– 1 586
Amortization of intangible assets	– 1 305	– 287	– 2 079	– 2 080	– 362	– 403	– 9	– 5	– 3 755	– 2 775
Impairment charges on property, plant & equipment, net	39	– 15	– 1	1	– 97	– 7	– 21	– 23	– 80	– 44
Impairment charges on intangible assets, net	– 19	– 231	– 120	– 7	– 27	– 39			– 166	– 277
Impairment charges and fair value gains on financial assets, net	– 32	– 20				– 1	– 72	– 48	– 104	– 69
Additions to restructuring provisions	– 206	– 433	– 51	– 64	– 93	– 4	– 49	– 3	– 399	– 504
Equity-based compensation of Novartis and Alcon equity plans	– 600	– 685	– 86	– 92	– 53	– 51	– 164	– 179	– 903	– 1 007

3. Segmentation of Key Figures 2015 and 2014 (Continued)

SEGMENTATION – CONSOLIDATED BALANCE SHEETS

	Pharmaceuticals		Alcon		Sandoz		Corporate (including eliminations)		Group	
(USD millions)	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014
Assets related to continuing operations	41 552	25 657	40 330	42 494	17 688	18 771	31 986	31 664	131 556	118 586
Assets related to discontinued operations										6 801
Total assets	**41 552**	**25 657**	**40 330**	**42 494**	**17 688**	**18 771**	**31 986**	**31 664**	**131 556**	**125 387**
Liabilities related to continuing operations	– 10 798	– 10 532	– 2 403	– 2 709	– 3 545	– 3 449	– 37 688	– 35 435	– 54 434	– 52 125
Liabilities related to discontinued operations										– 2 418
Total liabilities	**– 10 798**	**– 10 532**	**– 2 403**	**– 2 709**	**– 3 545**	**– 3 449**	**– 37 688**	**– 35 435**	**– 54 434**	**– 54 543**
Total equity									**77 122**	**70 844**
Net debt									16 484	6 549
Net operating assets	**30 754**	**15 125**	**37 927**	**39 785**	**14 143**	**15 322**			**93 606**	**77 393**
Included in assets and liabilities related to continuing operations[1] are:										
Total property, plant & equipment	9 985	9 732	2 504	2 413	2 788	3 123	705	715	15 982	15 983
Additions to property, plant & equipment[2]	1 309	1 676	565	517	421	531	224	180	2 519	2 904
Total goodwill and intangible assets	21 345	6 096	33 604	35 642	10 410	11 378	32	27	65 391	53 143
Additions to goodwill and intangible assets[2]	994	493	110	192	44	110	11	4	1 159	799
Total investment in associated companies	8	11			15	16	15 291	8 405	15 314	8 432
Additions to investment in associated companies[2]	5	9					57	44	62	53
Cash and cash equivalents, marketable securities, commodities, time deposits and derivative financial instruments							5 447	13 862	5 447	13 862
Financial debts and derivative financial instruments							21 931	20 411	21 931	20 411
Current income tax and deferred tax liabilities							8 072	8 175	8 072	8 175

[1] Items reflect the allocation to continuing operations as described on page 186.
[2] Excluding impact of business combinations.

The following table shows countries that accounted for more than 5% of at least one of the respective Group totals and regional information for the years ended December 31, 2015 and 2014:

	Net sales[1]				Total of selected non-current assets[2]			
USD millions	2015	%	2014	%	2015	%	2014	%
Country								
Switzerland	774	2	658	1	47 054	49	34 399	44
United States	18 079	37	17 337	33	28 677	30	28 329	37
United Kingdom	1 277	3	1 379	3	7 769	8	612	1
Germany	3 262	7	3 742	7	2 908	3	3 365	4
France	2 269	5	2 638	5	188		228	
Japan	3 163	6	3 781	7	142		141	
Other	20 590	40	22 645	44	9 949	10	10 484	14
Group	**49 414**	**100**	**52 180**	**100**	**96 687**	**100**	**77 558**	**100**
Region								
Europe	16 472	33	18 690	36	63 681	66	45 040	58
Americas	22 414	45	22 218	43	30 375	31	30 074	39
Asia/Africa/Australasia	10 528	22	11 272	21	2 631	3	2 444	3
Group	**49 414**	**100**	**52 180**	**100**	**96 687**	**100**	**77 558**	**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, second and third largest customer accounts for approximately 14%, 11% and 5% of net sales, respectively (2014: 12%, 11% and 5% 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 13%, 9% and 6%, respectively, of the trade receivables at December 31, 2015 (2014: 13%, 9% and 5% respectively).

PHARMACEUTICALS BUSINESS FRANCHISE NET SALES

	2015 USD millions	2014 USD millions	Change USD %
Oncology			
Gleevec/Glivec	4 658	4 746	– 2
Tasigna	1 632	1 529	7
Subtotal Bcr-Abl franchise	**6 290**	**6 275**	**0**
Sandostatin	1 630	1 650	– 1
Afinitor/Votubia	1 607	1 575	2
Exjade	917	926	– 1
Votrient	565	0	nm
Tafinlar/Mekinist	453	0	nm
Jakavi	410	279	47
Revolade/Promacta	402	0	nm
Femara	304	380	– 20
Zykadia	79	31	155
Other	819	587	40
Total Oncology	**13 476**	**11 703**	**15**
Neuroscience			
Gilenya	2 776	2 477	12
Exelon/Exelon Patch	728	1 009	– 28
Comtan/Stalevo	294	371	– 21
Other	141	243	– 42
Total Neuroscience	**3 939**	**4 100**	**– 4**
Retina			
Lucentis	2 060	2 441	– 16
Other	50	63	– 21
Total Retina	**2 110**	**2 504**	**– 16**
Immunology and Dermatology			
Neoral/Sandimmun(e)	570	684	– 17
Myfortic	441	543	– 19
Zortress/Certican	335	327	2
Cosentyx	261	0	nm
Ilaris	236	199	19
Other	160	173	– 8
Subtotal Immunology and Dermatology excluding Everolimus stent drug	**2 003**	**1 926**	**4**
Everolimus stent drug	134	205	– 35
Total Immunology and Dermatology	**2 137**	**2 131**	**0**

	2015 USD millions	2014 USD millions	Change USD %
Respiratory			
Ultibro Breezhaler	260	118	120
Onbrez Breezhaler/Arcapta Neohaler	166	220	– 25
Seebri Breezhaler	150	146	3
Subtotal COPD[1] portfolio	**576**	**484**	**19**
Xolair[2]	755	777	– 3
Other	263	320	– 18
Total Respiratory	**1 594**	**1 581**	**1**
Cardio-Metabolic			
Galvus	1 140	1 224	– 7
Entresto	21	0	nm
Other	0	8	nm
Total Cardio-Metabolic	**1 161**	**1 232**	**– 6**
Established medicines			
Diovan	1 284	2 345	– 45
Exforge	1 047	1 396	– 25
Voltaren	558	632	– 12
Ritalin/Focalin	365	492	– 26
Other	2 774	3 675	– 25
Total Established Medicines	**6 028**	**8 540**	**– 29**
Total Division net sales	**30 445**	**31 791**	**– 4**

[1] Chronic Obstructive Pulmonary Disease
[2] Net sales reflect *Xolair* sales for all indications (e.g. including *Xolair* SAA and *Xolair* CSU, which are managed by the Immunology and Dermatology franchise).
nm = not meaningful

The product portfolio of other segments is widely spread in 2015 and 2014.

4. Associated Companies

	Net income statement effect		Other comprehensive income effect		Total comprehensive income effect	
	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions
Roche Holding AG, Switzerland	343	599	– 149	– 51	194	548
GlaxoSmithKline Consumer Healthcare Holdings Ltd., UK	– 79		– 4		– 83	
Idenix Pharmaceuticals, Inc., US		812				812
LTS Lohmann Therapie-Systeme AG, Germany		436				436
Others	2	71		20	2	91
Associated companies related to continuing operations	**266**	**1 918**	**– 153**	**– 31**	**113**	**1 887**

Novartis has significant investments in Roche Holding AG, Basel (Roche) and in GlaxoSmithKline Consumer Healthcare Holdings Ltd, Brentford, Middlesex, UK as well as certain other smaller investments which are accounted for as associated companies:

	Balance sheet value	
	2015 USD millions	2014 USD millions
Roche Holding AG, Switzerland	7 919	8 159
GlaxoSmithKline Consumer Healthcare Holdings Ltd., UK	7 194	
Others	201	273
Total	**15 314**	**8 432**

ROCHE HOLDING AG

The Group's holding in Roche voting shares was 33.3% at December 31, 2015 and 2014. This investment represents approximately 6.3% of Roche's total outstanding voting and non-voting equity instruments at December 31, 2015 and 2014.

Since full-year 2015 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 2016 consolidated financial statements when available.

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, 2014 and for the six months ended June 30, 2015 since full year 2015 data is not yet available:

	Current assets CHF billions	Non-current assets CHF billions	Current liabilities CHF billions	Non-current liabilities CHF billions
December 31, 2014	31.1	63.5	23.1	31.0
June 30, 2015	25.2	61.3	21.7	28.0

	Revenue CHF billions	Net income CHF billions	Other comprehensive income CHF billions	Total comprehensive income CHF billions
December 31, 2014	47.5	7.3	– 2.3	5.0
June 30, 2015	23.6	4.1	– 1.1	3.0

A purchase price allocation was performed on the basis of publicly available information at the time of acquisition of the investment. The December 31, 2015 balance sheet value allocation is as follows:

	USD millions
Novartis share of Roche's estimated net assets	2 314
Novartis share of re-appraised intangible assets	1 039
Implicit Novartis goodwill	2 879
Current value of share in net identifiable assets and goodwill	**6 232**
Accumulated equity accounting adjustments and translation effects less dividends received	1 687
December 31, 2015 balance sheet value	**7 919**

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 2015, dividends received from Roche in relation to the distribution of its 2014 net income amounted to USD 429 million (2014: USD 473 million in relation with the distribution of its 2013 net income).

The consolidated income statement effects from applying Novartis accounting principles for this investment in 2015 and 2014 are as follows:

	2015 USD millions	2014 USD millions
Novartis share of Roche's estimated current-year consolidated net income	650	813
Prior-year adjustment	– 157	– 56
Amortization of fair value adjustments relating to intangible assets, net of taxes of USD 41 million (2014: USD 45 million)	– 150	– 158
Net income effect	**343**	**599**

The publicly quoted market value of the Novartis interest in Roche (Reuters symbol: RO.S) at December 31, 2015, was USD 14.9 billion (2014: USD 14.4 billion).

GLAXOSMITHKLINE CONSUMER HEALTHCARE HOLDINGS LTD

On March 2, 2015, Novartis closed its transactions with GlaxoSmithKline plc, Great Britain (GSK) announced in April 2014. As part of these transactions, Novartis and GSK have agreed to create a combined consumer healthcare business through a joint venture between Novartis OTC and GSK Consumer Healthcare. On March 2, 2015, a new entity GlaxoSmithKline Consumer Healthcare Holdings Ltd (GSK Consumer Healthcare) was formed via contribution of businesses from both Novartis and GSK.

At December 31, 2015, Novartis has a 36.5% interest in GSK Consumer Healthcare and four of eleven seats on the joint venture entity's Board of Directors. Furthermore, Novartis has customary minority rights and also exit rights at a pre-defined, market based pricing mechanism.

Novartis has valued the contribution of 63.5% of its OTC Division in exchange for 36.5% of the GSK Consumer Healthcare business at fair value. Based on the estimates of values exchanged, an investment in associated company of USD 7.6 billion was recorded on March 2, 2015.

The December 31, 2015 balance sheet value allocation is as follows:

	USD millions
Novartis share of GSK Consumer Healthcare's estimated net assets	957
Novartis share of re-appraised intangible assets	4 273
Implicit Novartis goodwill	1 941
Current value of share in net identifiable assets and goodwill	**7 171**
Accumulated equity accounting adjustments and translation effects	23
December 31, 2015 balance sheet value	**7 194**

The identified intangible assets principally relate to the value of the indefinite life GSK Consumer Healthcare intangible assets. The identified intangible assets with a definite life are amortized on a straight-line basis over their estimated average useful life of 20 years.

The following tables show interim unaudited financial information of GSK Consumer Healthcare, including current values of fair value adjustments made at the time of acquisition, for the seven months ended September 30, 2015 since full year 2015 data is not yet available:

	Current assets GBP billions	Non-current assets GBP billions	Current liabilities GBP billions	Non-current liabilities GBP billions
September 30, 2015	3.3	21.3	1.8	2.1

	Revenue GBP millions	Net income GBP millions	Other comprehensive income GBP millions	Total comprehensive income GBP millions
September 30, 2015	3 241	4	– 44	– 40

Since full-year 2015 financial data for GSK Consumer Healthcare are not available when Novartis produces its consolidated financial results, a projection of the latest internal management reporting is used to estimate the Group's share of GSK Consumer Healthcare's net result for the year. Any differences between this estimate and actual results will be adjusted in the Group's 2016 consolidated financial statements when available.

The consolidated income statement effects from applying Novartis accounting principles for this investment in 2015 are as follows:

	2015 USD millions
Novartis share of GSK Consumer Healthcare's estimated current-year consolidated net income	– 17
Amortization of fair value adjustments relating to intangible assets and inventory, net of taxes of USD 18 million	– 62
Net income effect	**– 79**

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 USD 812 million and USD 421 million, respectively. Others include a gain of USD 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

	2015 USD millions	2014 USD millions
Interest expense	– 669	– 701
Income/(expense) due to discounting long-term liabilities	14	– 3
Total interest expense	**– 655**	**– 704**

OTHER FINANCIAL INCOME AND EXPENSE

	2015 USD millions	2014 USD millions
Interest income	33	33
Dividend income	1	1
Net capital losses on available-for-sale securities	– 8	– 2
Income on forward contracts and options	1	1
Impairment of commodities and available-for-sale securities	– 132	
Other financial expense	– 23	– 25
Monetary loss from hyperinflation accounting	– 72	– 61
Currency result, net	– 254	22
Total other financial income and expense	**– 454**	**– 31**

6. Taxes

INCOME BEFORE TAXES

	2015 USD millions	2014 USD millions
Switzerland	5 765	5 245
Foreign	2 369	7 027
Income before taxes from continuing operations	**8 134**	**12 272**
Income/(loss) before taxes from discontinued operations	12 479	– 351
Total income before taxes	**20 613**	**11 921**

CURRENT AND DEFERRED INCOME TAX EXPENSE

	2015 USD millions	2014 USD millions
Switzerland	– 317	– 661
Foreign	– 1 333	– 1 952
Current income tax expense from continuing operations	**– 1 650**	**– 2 613**
Switzerland	– 68	309
Foreign	612	759
Deferred tax income from continuing operations	**544**	**1 068**
Income tax expense from continuing operations	**– 1 106**	**– 1 545**
Income tax expense from discontinued operations	– 1 713	– 96
Total income tax expense	**– 2 819**	**– 1 641**

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:

	2015 %	2014 %
Expected tax rate	12.4	11.7
Effect of disallowed expenditures	3.5	2.9
Effect of utilization of tax losses brought forward from prior periods	– 0.2	– 0.3
Effect of income taxed at reduced rates	– 0.3	– 0.6
Effect of tax credits and allowances	– 2.7	– 1.8
Effect of tax rate change on opening balance	– 0.5	
Effect of tax benefits expiring in 2017	– 0.4	– 0.8
Effect of non-deductible losses in Venezuela	1.2	
Effect of write down and reversal of write-down of investments in subsidiaries	– 0.9	0.9
Prior year and other items	1.5	0.6
Effective tax rate for continuing operations	**13.6**	**12.6**
Effective tax rate for discontinued operations	13.7	– 27.4
Effective tax rate	**13.7**	**13.8**

The utilization of tax-loss carry-forwards lowered the tax charge by USD 15 million in 2015 and by USD 34 million in 2014, 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.

	2015	2014
Basic earnings per share		
Weighted average number of shares outstanding (in millions)	2 403	2 426
Net income/loss attributable to shareholders of Novartis AG (USD millions)		
– Continuing operations	7 025	10 654
– Discontinued operations	10 758	– 444
– Total	**17 783**	**10 210**
Basic earnings per share (USD)		
– Continuing operations	2.92	4.39
– Discontinued operations	4.48	– 0.18
– Total	**7.40**	**4.21**

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.

	2015	2014
Diluted earnings per share		
Weighted average number of shares outstanding (in millions)	2 403	2 426
Adjustment for vesting of restricted shares and dilutive shares from options (in millions)	35	44
Weighted average number of shares for diluted earnings per share (in millions)	2 438	2 470
Net income/loss attributable to shareholders of Novartis AG (USD millions)		
– Continuing operations	7 025	10 654
– Discontinued operations	10 758	– 444
– Total	**17 783**	**10 210**
Diluted earnings per share (USD)		
– Continuing operations	2.88	4.31
– Discontinued operations	4.41	– 0.18
– Total	**7.29**	**4.13**

No options were excluded from the calculation of diluted EPS in 2014 or 2015, as all options were dilutive in both years.

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.

The following table summarizes these value adjustments and currency translation effects attributable to Novartis shareholders:

	Fair value adjustments on marketable securities USD millions	Fair value adjustments on deferred cash flow hedges USD millions	Actuarial losses from defined benefit plans USD millions	Cumulative currency translation effects USD millions	Total value adjustments USD millions
Value adjustments at January 1, 2014	**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**
Fair value adjustments on financial instruments	28	20			48
Net actuarial losses from defined benefit plans [1]			– 147		– 147
Currency translation effects [2]				– 1 659	– 1 659
Total value adjustments in 2015	**28**	**20**	**– 147**	**– 1 659**	**– 1 758**
Fair value adjustments related to divestments			100		100
Value adjustments at December 31, 2015	**461**	**– 18**	**– 5 413**	**747**	**– 4 223**

[1] Net actuarial gains of USD 10 million are attributable to discontinued operations up to the respective divestment dates (2014: net actuarial losses of USD 65 million).
[2] USD 29 million currency translation losses are attributable to discontinued operations up to the respective divestment dates (2014: losses of USD 37 million).

8.1) The 2015 and 2014 changes in the fair value of financial instruments were as follows:

	Fair value adjustments on marketable securities USD millions	Fair value adjustments on deferred cash flow hedges USD millions	Total USD millions
Fair value adjustments at January 1, 2015	**433**	**– 38**	**395**
Changes in fair value:			
– Available-for-sale marketable securities	– 130		– 130
– Available-for-sale financial investments	80		80
– Associated companies' movements in comprehensive income	– 8		– 8
Realized net gains transferred to the consolidated income statement:			
– Marketable securities sold	– 1		– 1
– Other financial assets sold	– 103		– 103
Amortized net losses on cash flow hedges transferred to the consolidated income statement		21	21
Impaired financial assets transferred to the consolidated income statement	194		194
Deferred tax on above items	– 4	– 1	– 5
Fair value adjustments during the year	**28**	**20**	**48**
Fair value adjustments at December 31, 2015	**461**	**– 18**	**443**

	Fair value adjustments on marketable securities USD millions	Fair value adjustments on deferred cash flow hedges USD millions	Total USD millions
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**

8.2) The Group has investments in associated companies, principally Roche Holding AG and GlaxoSmithKline Consumer Healthcare Holdings Ltd. 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 USD 48 million (2014: loss of USD 5 million).

8.3) In 2015, cumulative currency translation losses of USD 10 million have been recycled through the income statement as a result of the divestments of subsidiaries (2014: nil).

Currency translation losses of associated companies of USD 97 million were recognized in 2015 (2014: loss of USD 31 million).

8.4) Remeasurements from defined benefit plans arise as follows:

	2015 USD millions	2014 USD millions
Defined benefit pension plans before tax	– 252	– 999
Other post-employment benefit plans before tax	168	– 235
Taxation on above items	– 63	412
Total after tax	**– 147**	**– 822**

8.5) The following table shows contributions of associated companies to other comprehensive income:

	Note	2015 USD millions	2014 USD millions
Fair value adjustments attributable to associated companies		– 8	5
Novartis share of other items recorded in comprehensive income recognized by associated companies, net of taxes	8.2	– 48	– 5
Currency translation adjustments		– 97	– 31
Other comprehensive income attributable to associated companies	4	**– 153**	**– 31**

9. Changes in Consolidated Equity

9.1) A dividend of CHF 2.60 per share was approved at the 2015 Annual General meeting for the year ended December 31, 2014, resulting in a total dividend payment of USD 6.6 billion in 2015 (2014: the CHF 2.45 per share dividend amounted to USD 6.8 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) During 2015, 63.6 million shares were purchased for USD 6.1 billion (2014: 79.2 million shares for USD 6.9 billion). These share purchases comprise of 9.6 million shares which were repurchased for USD 897 million on the SIX Swiss Exchange first trading line (2014: 46.8 million shares for USD 4.1 billion), 4.1 million shares were acquired for USD 417 million from employees which were previously granted to them under the respective programs (2014: 5.4 million shares for USD 473 million), and in addition, Novartis repurchased 49.9 million shares for USD 4.8 billion on the SIX Swiss Exchange second trading line under the USD 5 billion share buy-back announced in November 2013, which was completed in November 2015, and also to offset the dilutive impact from equity-based participation plans (2014: 27.0 million shares for USD 2.4 billion).

9.3) In 2015, Novartis reduced its share capital by cancelling a total of 29.2 million shares which were repurchased during 2013 and 2014 on the SIX Swiss Exchange second trading line.

9.4) In 2014, Novartis has entered into an irrevocable, non-discretionary arrangement with a bank to repurchase Novartis own shares on the second trading line under its USD 5 billion share buy-back as well as to mitigate dilution from equity-based participation plans. The commitment under this arrangement amounted to USD 658 million as of December 31, 2014, reflecting the expected purchases by the bank under such trading plan over a rolling 90 days period. This trading plan was fully executed and has expired. As a result, there is no contingent liability related to this plan as of December 2015.

9.5) 27.0 million shares were delivered as a result of options being exercised related to equity-based participation plans and delivery of treasury shares, which contributed USD 1.6 billion (2014: 41.4 million shares for USD 2.4 billion). The average share price of the shares delivered was significantly below market price reflecting the strike price of the options exercised.

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 2015, 11.9 million shares were transferred to associates as part of equity-settled compensation (2014: 10.3 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) Changes in non-controlling interests in subsidiaries resulted in a reduction in consolidated equity of USD 10 million (2014: reduction of USD 120 million).

10. Property, Plant & Equipment Movements

	Land USD millions	Buildings USD millions	Construction in progress USD millions	Machinery & other equipment USD millions	Total USD millions
2015					
Cost					
January 1	**744**	**11 312**	**3 985**	**15 387**	**31 428**
Reclassifications[1]	12	1 833	– 2 601	756	
Additions	4	408	1 665	442	2 519
Disposals and derecognitions[2]	– 41	– 332	– 59	– 704	– 1 136
Currency translation effects	– 31	– 364	– 180	– 788	– 1 363
December 31	**688**	**12 857**	**2 810**	**15 093**	**31 448**
Accumulated depreciation					
January 1	**– 30**	**– 5 093**	**– 37**	**– 10 285**	**– 15 445**
Depreciation charge	– 3	– 462		– 1 005	– 1 470
Accumulated depreciation on disposals and derecognitions[2]	2	246	32	594	874
Impairment charge	– 12	– 37	– 4	– 82	– 135
Reversal of impairment charge		9		46	55
Currency translation effects	3	149	2	501	655
December 31	**– 40**	**– 5 188**	**– 7**	**– 10 231**	**– 15 466**
Net book value at December 31	**648**	**7 669**	**2 803**	**4 862**	**15 982**
Net book value of property, plant & equipment under finance lease contracts					**85**
Commitments for purchases of property, plant & equipment					**359**

[1] Reclassifications between various asset categories due to completion of plant and other equipment under construction.
[2] Derecognition of assets that are no longer used and are not considered to have a significant disposal value or other alternative use.

Borrowing costs on new additions to property, plant and equipment eligible for capitalization have been capitalized and amounted to USD 21 million in 2015 (2014: USD 20 million). The capitalization rate used to determine the amount of borrowing costs eligible for capitalization is 25% (2014: 25%) and the interest rate used is 4% (2014: 4%).

10. Property, Plant & Equipment Movements (Continued)

	Land USD millions	Buildings USD millions	Construction in progress USD millions	Machinery & other equipment USD millions	Total USD millions
2014					
Cost					
January 1	**920**	**12 933**	**3 635**	**17 813**	**35 301**
Cost of assets related to discontinued 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 discontinued 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**
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 discontinued operations, for the period from January 1, 2014 to the portfolio transformation announcement on April 22, 2014, were USD 50 million.
[3] Derecognition of assets that are no longer used and are not considered to have a significant disposal value or other alternative use.
[4] Depreciation charge in discontinued operations, for the period from January 1, 2014 to the portfolio transformation announcement on April 22, 2014, was USD 66 million.

11. Goodwill and Intangible Assets Movements

	Goodwill USD millions	Acquired research & development USD millions	Alcon brand name USD millions	Technologies USD millions	Currently marketed products USD millions	Marketing know-how USD millions	Other intangible assets USD millions	Total of intangible assets other than goodwill USD millions
2015								
Cost								
January 1	**29 737**	**2 843**	**2 980**	**6 658**	**20 916**	**5 960**	**1 251**	**40 608**
Impact of business combinations	2 438	730			12 970		15	13 715
Reclassifications[1]		– 36			5		31	
Additions		881			217		61	1 159
Disposals and derecognitions[2]		– 294			– 26		– 4	– 324
Currency translation effects	– 590	– 5		– 95	– 697		– 13	– 810
December 31	**31 585**	**4 119**	**2 980**	**6 563**	**33 385**	**5 960**	**1 341**	**54 348**
Accumulated amortization								
January 1	**– 426**	**– 685**		**– 2 539**	**– 11 684**	**– 954**	**– 914**	**– 16 776**
Amortization charge				– 580	– 2 848	– 238	– 89	– 3 755
Accumulated amortization on disposals and derecognitions[2]		68			241		4	313
Impairment charge		– 33			– 164		– 9	– 206
Reversal of impairment charge					40			40
Currency translation effects	15			49	194		10	253
December 31	**– 411**	**– 650**		**– 3 070**	**– 14 221**	**– 1 192**	**– 998**	**– 20 131**
Net book value at December 31	**31 174**	**3 469**	**2 980**	**3 493**	**19 164**	**4 768**	**343**	**34 217**

[1] Reclassifications between various asset categories as a result of product launches of acquired In-Process Research & Development.
[2] Derecognitions of assets that are no longer used or being developed and are not considered to have a significant disposal value or other alternative use.

SEGMENTATION OF GOODWILL AND INTANGIBLE ASSETS

The net book values at December 31, 2015 of goodwill and intangible assets are allocated to the Group's reporting segments as summarized below.

	Goodwill USD millions	Acquired research & development USD millions	Alcon brand name USD millions	Technologies USD millions	Currently marketed products USD millions	Marketing know-how USD millions	Other intangible assets USD millions	Total of intangible assets other than goodwill USD millions
Pharmaceuticals	5 530	2 511		13	13 151		140	15 815
Alcon	17 947	461	2 980	2 850	4 435	4 768	163	15 657
Sandoz	7 690	490		630	1 578		22	2 720
Corporate	7	7					18	25
Total	**31 174**	**3 469**	**2 980**	**3 493**	**19 164**	**4 768**	**343**	**34 217**
Potential impairment charge, if any, if discounted cash flows fell by 5%					4			
Potential impairment charge, if any, if discounted cash flows fell by 10%					9			

11. Goodwill and Intangible Assets Movements (Continued)

	Goodwill USD millions	Acquired research & development USD millions	Alcon brand name USD millions	Technologies USD millions	Currently marketed products USD millions	Marketing know-how USD millions	Other intangible assets USD millions	Total of intangible assets other than goodwill USD millions
2014								
Cost								
January 1	**31 554**	**2 648**	**2 980**	**7 104**	**24 160**	**5 960**	**1 479**	**44 331**
Cost of assets related to discontinued 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 discontinued 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 discontinued operations, for the period from January 1, 2014 to the portfolio transformation announcement on April 22, 2014, were USD 11 million.
[3] Derecognitions of assets that are no longer used or being developed and are not considered to have a significant disposal value or other alternative use.
[4] Amortization charge in discontinued operations, for the period from January 1, 2014 to the portfolio transformation announcement on April 22, 2014, was USD 77 million.

The Pharmaceuticals, Alcon and Sandoz divisions' cash generating units, to which indefinite life intangibles and/or goodwill are allocated, each comprise a group of smaller cash generating units. The valuation method of the recoverable amount of the cash generating units, to which indefinite life intangibles and/or goodwill are allocated, is based on the fair value less costs of disposal. The following assumptions are used in the calculations:

	Pharmaceuticals %	Alcon %	Sandoz %
Cash flows growth rate assumptions after forecast period	1	3	0 to 2
Discount rate (post-tax)	6	6	6

In 2015, intangible asset impairment charges for continuing operations of USD 206 million were recognized, of which USD 120 million were recorded in the Alcon Division and USD 86 million in total in the Pharmaceuticals and Sandoz divisions.

In 2014, intangible asset impairment charges in continuing operations amounted to USD 347 million (USD 302 million in the Pharmaceuticals Division and USD 45 million in total in the Sandoz and Alcon divisions).

In 2015, the reversal of prior year impairment charges amounted to USD 40 million (2014: USD 70 million).

12. Deferred Tax Assets and Liabilities

	Property, plant & equipment USD millions	Intangible assets USD millions	Pensions and other benefit obligations of associates USD millions	Inventories USD millions	Tax loss carryforwards USD millions	Other assets, provisions and accruals USD millions	Valuation allowance USD millions	Total USD millions
Gross deferred tax assets at January 1, 2015	**268**	**214**	**1 749**	**3 470**	**85**	**2 601**	**– 14**	**8 373**
Gross deferred tax liabilities at January 1, 2015	**– 639**	**– 4 242**	**– 410**	**– 578**	**– 3**	**– 606**		**– 6 478**
Net deferred tax balance at January 1, 2015	**– 371**	**– 4 028**	**1 339**	**2 892**	**82**	**1 995**	**– 14**	**1 895**
At January 1, 2015	**– 371**	**– 4 028**	**1 339**	**2 892**	**82**	**1 995**	**– 14**	**1 895**
Credited/(charged) to income	– 57	296	83	376	– 22	– 129	– 3	544
Charged to equity						– 216		– 216
(Charged)/credited to other comprehensive income			– 63			29		– 34
Impact of business combinations		390				– 13		377
Other movements	5	– 9	– 30	– 12	– 3	73	12	36
Net deferred tax balance at December 31, 2015	**– 423**	**– 3 351**	**1 329**	**3 256**	**57**	**1 739**	**– 5**	**2 602**
Gross deferred tax assets at December 31, 2015	216	611	1 730	3 821	62	2 871	– 5	9 306
Gross deferred tax liabilities at December 31, 2015	– 639	– 3 962	– 401	– 565	– 5	– 1 132		– 6 704
Net deferred tax balance at December 31, 2015	**– 423**	**– 3 351**	**1 329**	**3 256**	**57**	**1 739**	**– 5**	**2 602**
After offsetting USD 349 million of deferred tax assets and liabilities within the same tax jurisdiction the balance amounts to:								
Deferred tax assets at December 31, 2015								8 957
Deferred tax liabilities at December 31, 2015								– 6 355
Net deferred tax balance at December 31, 2015								**2 602**
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 discontinued 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 USD 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

12. Deferred Tax Assets and Liabilities (Continued)

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 USD 3.9 billion (2014: USD 3.6 billion) and deferred tax liabilities of USD 5.8 billion (2014: USD 5.6 billion) are expected to have an impact on current taxes payable after more than twelve months.

At December 31, 2015, unremitted earnings of USD 65 billion (2014: USD 55 billion) have been retained by consolidated entities for reinvestment. Therefore, no provision is made for income taxes that would be 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.

	2015 USD millions	2014 USD millions
Temporary differences on which no deferred tax has been provided as they are permanent in nature related to:		
– Investments in subsidiaries	2 644	7 802
– Goodwill from acquisitions	– 28 202	– 28 567

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 USD millions	Capitalized USD millions	2015 total USD millions
One year	22	39	61
Two years	80	25	105
Three years	37	6	43
Four years	54	7	61
Five years	222		222
More than five years	465	712	1 177
Total	**880**	**789**	**1 669**

In 2015, USD 13 million (2014: USD 14 million) of tax-loss carry-forwards expired.

	Not capitalized USD millions	Capitalized USD millions	2014 total USD millions
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**

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

	2015 USD millions	2014 USD millions
Available-for-sale long-term financial investments	1 263	1 008
Long-term receivables from customers	317	334
Minimum lease payments from finance lease agreements	216	199
Contingent consideration receivables	550	
Long-term loans, advances and security deposits	120	179
Total financial assets	**2 466**	**1 720**

OTHER NON-CURRENT ASSETS

	2015 USD millions	2014 USD millions
Deferred compensation plans	409	381
Prepaid post-employment benefit plans	36	37
Other non-current assets	156	136
Total other non-current assets	**601**	**554**

MINIMUM FINANCE LEASE PAYMENTS

The following table shows the receivables of the gross investments in finance leases and the net present value of the minimum lease payments, as well as unearned finance income. The finance income is recorded in "Other income".

	2015				
USD millions	Total future payments	Unearned interest income	Present value	Provision	Net book value
Not later than one year [1]	89	– 6	83	– 1	82
Between one and five years	221	– 17	204	– 10	194
Later than five years	61	– 5	56	– 34	22
Total	**371**	**– 28**	**343**	**– 45**	**298**

[1] The current portion of the minimum lease payments is recorded in trade receivables or other current assets (to the extent not yet invoiced).

	2014				
USD millions	Total future payments	Unearned interest income	Present value	Provision	Net book value
Not later than one year [1]	50	– 3	47	– 1	46
Between one and five years	149	– 8	141	– 6	135
Later than five years	69	– 5	64		64
Total	**268**	**– 16**	**252**	**– 7**	**245**

[1] The current portion of the minimum lease payments is recorded in trade receivables or other current assets (to the extent not yet invoiced).

14. Inventories

	2015 USD millions	2014 USD millions
Raw material, consumables	658	756
Finished products and work in progress	5 568	5 337
Total inventories	**6 226**	**6 093**

The amount of inventory recognized as an expense in "Cost of goods sold" in the consolidated income statements during 2015 amounted to USD 10.5 billion (2014: USD 11.6 billion). The group recognized inventory provisions amounting to USD 356 million (2014: USD 1.1 billion) and reversed inventory provisions amounting to USD 148 million (2014: USD 379 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

	2015 USD millions	2014 USD millions
Total gross trade receivables	8 322	8 431
Provisions for doubtful trade receivables	– 142	– 156
Total trade receivables, net	**8 180**	**8 275**

The following table summarizes the movement in the provision for doubtful trade receivables:

	2015 USD millions	2014 USD millions
January 1	**– 156**	**– 195**
Provisions for doubtful trade receivables related to discontinued operations		15
Provisions for doubtful trade receivables charged to the consolidated income statement	– 68	– 92
Utilization or reversal of provisions for doubtful trade receivables	71	101
Currency translation effects	11	15
December 31	**– 142**	**– 156**

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:

	2015 USD millions	2014 USD millions
Not overdue	7 318	7 406
Past due for not more than one month	265	334
Past due for more than one month but less than three months	255	275
Past due for more than three months but less than six months	193	174
Past due for more than six months but less than one year	156	102
Past due for more than one year	135	140
Provisions for doubtful trade receivables	– 142	– 156
Total trade receivables, net	**8 180**	**8 275**

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 where the trade receivables are due directly from local governments or from government-funded entities, and evaluates trade receivables in these countries for potential collection risks. 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.

With regard to the GIPS countries, the majority of the outstanding trade receivables from these countries are due directly from local governments or from government-funded entities. The gross trade receivables from GIPS countries at December 31, 2015 amount to USD 920 million (2014: USD 915 million), of which USD 58 million are past due for more than one year (2014: USD 69 million) and for which provisions of USD 37 million have been recorded (2014: USD 48 million). At December 31, 2015 amounts past due for more than one year are not significant in any of the GIPS countries on a standalone basis.

Trade receivables include amounts denominated in the following major currencies:

Currency	2015 USD millions	2014 USD millions
CHF	124	184
CNY	244	238
EUR	1 536	1 562
GBP	187	184
JPY	740	951
USD	3 311	3 059
Other	2 038	2 097
Total trade receivables, net	**8 180**	**8 275**

16. Marketable Securities, Commodities, Time Deposits, Derivative Financial Instruments and Cash and Cash Equivalents

MARKETABLE SECURITIES, COMMODITIES, TIME DEPOSITS AND DERIVATIVE FINANCIAL INSTRUMENTS

	2015 USD millions	2014 USD millions
Debt securities	339	327
Equity securities	6	15
Fund investments	33	35
Total available-for-sale marketable securities	**378**	**377**
Commodities	86	97
Time deposits with original maturity more than 90 days	164	6
Derivative financial instruments	143	356
Accrued interest on debt securities and time deposits	2	3
Total marketable securities, commodities, time deposits and derivative financial instruments	**773**	**839**

At December 31, 2015 all debt securities are denominated in USD except for USD 22 million in EUR (2014: USD 25 million). In addition, at December 31, 2014 debt securities of 1 million are denominated in CHF.

CASH AND CASH EQUIVALENTS

	2015 USD millions	2014 USD millions
Current accounts	3 074	3 607
Time deposits and short-term investments with original maturity less than 90 days	1 600	9 416
Total cash and cash equivalents	**4 674**	**13 023**

17. Other Current Assets

	2015 USD millions	2014 USD millions
VAT receivable	609	509
Withholding tax recoverable	97	144
Income tax receivables	171	202
Reimbursements from insurers		87
Prepaid expenses		
– Third parties	617	547
– Associated companies	4	3
Other receivables		
– Third parties	1 463	1 033
– Associated companies	31	5
Total other current assets	**2 992**	**2 530**

18. Details of Share capital and Share Movements

The following table shows the movement in the share capital:

	Dec 31, 2013 USD millions	Movement in year USD millions	Dec 31, 2014 USD millions	Movement in year USD millions	Dec 31, 2015 USD millions
Share capital	1 001		1 001	– 10	991
Treasury shares	– 89	– 14	– 103	2	– 101
Outstanding share capital	**912**	**– 14**	**898**	**– 8**	**890**

The following table shows the movement in the shares:

	Number of shares [1]				
	Dec 31, 2013	Movement in year	Dec 31, 2014	Movement in year	Dec 31, 2015
Total Novartis shares	2 706 193 000		2 706 193 000	– 29 200 000	2 676 993 000
Total treasury shares	– 280 108 692	– 27 458 051	– 307 566 743	4 468 560	– 303 098 183
Total outstanding shares	**2 426 084 308**	**– 27 458 051**	**2 398 626 257**	**– 24 731 440**	**2 373 894 817**

[1] All shares are voting shares, which are registered, authorized, issued and fully paid.

In 2015, Novartis reduced its share capital by cancelling a total of 29.2 million shares which were repurchased during 2013 and 2014 on the SIX Swiss Exchange second trading line.

During 2015, 38.9 million treasury shares were delivered as a result of options being exercised and physical share deliveries related to equity-based participation plans (2014: 51.7 million shares). 9.6 million shares were repurchased on the SIX Swiss Exchange first trading line (2014: 46.8 million). 4.1 million shares were acquired from employees which were previously granted to them under the respective programs (2014: 5.4 million). In addition, Novartis repurchased 49.9 million shares on the SIX Swiss Exchange second trading line under the USD 5 billion share buy-back announced in November 2013, which was completed in November 2015, and also to offset the dilutive impact from equity-based participation plans (2014: 27.0 million shares). With these transactions, the total number of shares outstanding was reduced by 24.7 million shares in 2015 (2014: reduction of 27.5 million shares) and the sixth share buy-back program which was approved by the shareholders at the AGM 2008 has been completed. The market maker has acquired 7 million written call options, originally issued as part of the share-based compensation for associates that have not yet been exercised. The weighted average exercise price of these options is USD 58.27 and they have contractual lives of 10 years.

19. Non-Current Financial Debt

	2015 USD millions	2014 USD millions
Straight bonds	17 193	15 982
Liabilities to banks and other financial institutions [1]	706	803
Finance lease obligations	87	3
Total, including current portion of non-current financial debt	**17 986**	**16 788**
Less current portion of non-current financial debt	– 1 659	– 2 989
Total non-current financial debts	**16 327**	**13 799**
Straight bonds		
3.625% CHF 800 million bond 2008/2015 of Novartis AG, Basel, Switzerland, issued at 100.35%		807
5.125% USD 3 000 million bond 2009/2019 of Novartis Securities Investment Ltd., Hamilton, Bermuda, issued at 99.822%	2 993	2 991
4.25% EUR 1 500 million bond 2009/2016 of Novartis Finance S.A., Luxembourg, Luxembourg, issued at 99.757%	1 639	1 821
2.9% USD 2 000 million bond 2010/2015 of Novartis Capital Corporation, New York, United States, issued at 99.522%		1 999
4.4% USD 1 000 million bond 2010/2020 of Novartis Capital Corporation, New York, United States, issued at 99.237%	994	993
2.4% USD 1 500 million bond 2012/2022 of Novartis Capital Corporation, New York, United States, issued at 99.225%	1 488	1 486
3.7% USD 500 million bond 2012/2042 of Novartis Capital Corporation, New York, United States, issued at 98.325%	488	488
3.4% USD 2 150 million bond 2014/2024 of Novartis Capital Corporation, New York, United States, issued at 99.287%	2 130	2 128
4.4% USD 1 850 million bond 2014/2044 of Novartis Capital Corporation, New York, United States, issued at 99.196%	1 823	1 823
0.75% EUR 600 million bond 2014/2021 of Novartis Finance S.A., Luxembourg, Luxembourg, issued at 99.134%	650	721
1.625% EUR 600 million bond 2014/2026 of Novartis Finance S.A., Luxembourg, Luxembourg, issued at 99.697%	652	725
0.25% CHF 500 million bond 2015/2025 of Novartis AG, Basel, Switzerland, issued at 100.64%	507	
0.625% CHF 550 million bond 2015/2029 of Novartis AG, Basel, Switzerland, issued at 100.502%	557	
1.050% CHF 325 million bond 2015/2035 of Novartis AG, Basel, Switzerland, issued at 100.479%	329	
3.0% USD 1 750 million bond 2015/2025 of Novartis Capital Corporation, New York, United States, issued at 99.010%	1 726	
4.0% USD 1 250 million bond 2015/2045 of Novartis Capital Corporation, New York, United States, issued at 98.029%	1 217	
Total straight bonds	**17 193**	**15 982**

[1] Average interest rate 0.7% (2014: 0.9%)

The following tables provide a breakdown of total non-current financial debt, including current portion by maturity and currency:

		2015 USD millions	2014 USD millions
Breakdown by maturity	2015		2 989
	2016	1 659	1 838
	2017	170	175
	2018	335	342
	2019	3 161	3 068
	2020	998	1 004
	After 2020	11 663	7 372
Total		**17 986**	**16 788**

		2015 USD millions	2014 USD millions
Breakdown by currency	USD	12 946	11 912
	EUR	2 981	3 329
	JPY	665	669
	CHF	1 393	807
	Others	1	71
Total		**17 986**	**16 788**

19. Non-Current Financial Debt (Continued)

Fair value comparison	2015 Balance sheet USD millions	2015 Fair values USD millions	2014 Balance sheet USD millions	2014 Fair values USD millions
Straight bonds	17 193	17 770	15 982	17 013
Others	793	793	806	806
Total	**17 986**	**18 563**	**16 788**	**17 819**

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	2015 USD millions	2014 USD millions
Total amount of collateralized non-current financial debts	7	1
Total net book value of property, plant & equipment pledged as collateral for non-current financial debts	112	184

The Group's collateralized non-current financial debt consists of loan facilities at usual market conditions.

The percentage of fixed rate financial debt to total financial debt was 82% at December 31, 2015 and December 31, 2014.

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 2015 was 2.9% (2014: 3.4%).

20. Provisions and Other Non-Current Liabilities

	2015 USD millions	2014 USD millions
Accrued liability for employee benefits:		
Defined benefit pension plans	3 952	3 839
Other long-term employee benefits and deferred compensation	507	518
Other post-employment benefits	960	1 054
Environmental remediation provisions	791	828
Provisions for product liabilities, governmental investigations and other legal matters	451	521
Contingent consideration	712	465
Other non-current liabilities	671	447
Total	**8 044**	**7 672**

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, 2015 totals USD 0.9 billion (2014: USD 0.9 billion) of which USD 80 million (2014: USD 95 million) is current.

A substantial portion of the environmental remediation provisions relate to the remediation of Basel regional landfills in the adjacent border areas in Switzerland, Germany and France. The provisions are re-assessed on a yearly basis and are 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.

The following table shows the movements in the environmental liability provisions during 2015 and 2014:

	2015 USD millions	2014 USD millions
January 1	**923**	**1 061**
Cash payments	– 52	– 33
Releases	– 5	– 6
Additions	6	2
Currency translation effects	– 1	– 101
December 31	**871**	**923**
Less current provision	– 80	– 95
Non-current environmental remediation provisions at December 31	**791**	**828**

The expected timing of the related cash outflows as of December 31, 2015 is currently projected as follows:

	Expected cash outflows USD millions
Due within two years	180
Due later than two years, but within five years	118
Due later than five years but within ten years	457
Due after ten years	116
Total environmental remediation liability provisions	**871**

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 that a payment is either not probable or cannot be reliably estimated. In total, these not-provisioned-for matters include fewer than 500 individual product liability cases and certain 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 USD 1.2 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; the Group believes that information about these 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. There might also be cases for which the Group was able to make a reliable estimate of the possible loss or the range of possible loss, but 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, cyber security 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 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 2020. 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 2015.

20. Provisions and Other Non-Current Liabilities (Continued)

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 and other promotional activities for certain NPC 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. The individual relator continues to litigate the kickback claims on behalf of other states and municipalities. 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 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.

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 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.

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 cooperating with this civil 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 (NAG), F. Hoffmann-La Roche AG, Genentech Inc. and Roche S.p.A. colluded to artificially preserve the market positions of Avastin® and *Lucentis*. In March 2014, the ICA imposed a fine equivalent to USD 125 million on NAG and Novartis Farma S.p.A. and a fine on F. Hoffmann-La Roche AG and Roche S.p.A. equivalent to USD 122 million. As required by Italian law, Novartis has paid the ICA fine, subject to the right to later claim recoupment. In February 2015, Novartis appealed at the council of state the decision of the Tribunale amministrativo regionale (TAR) del Lazio which had upheld the fines. The decision is pending. Novartis' appeal of a decision by the Italian Medicines Agency to include Avastin® in a list of drugs to be reimbursed off-label for age-related macular degeneration (AMD) was rejected by the TAR Lazio in January 2016. Novartis will appeal this decision. In the second quarter of 2014, the Italian Ministry of Health (MoH) indicated in a letter that it intended to seek a total equivalent of approximately USD 1.3 billion in damages from Novartis and Roche entities based on the above allegations, and in the first quarter of 2015 the Lombardia region sent a payment request equivalent to approximately USD 63 million. Novartis vigorously contests the MoH and Lombardia claims.

In France, Novartis' appeal is pending against an inspection in April 2014 by the French Competition Authority 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 AMD. Also in France, Novartis is appealing a temporary recommendation of use and reimbursement of off-label Avastin® for neovascular AMD by hospital ophthalmologists, in force since September 2015, as well as the decree on which the recommendation is based. In both Italy and France, Novartis believes that allowing the widespread off-label use and reimbursement of Avastin®, despite the presence of available licensed alternatives, would result in a breach of applicable regulations.

Japan investigation
In December 2015, trial started against a former Novartis Pharma K.K. (NPKK) employee, and also NPKK under the dual liability concept in Japanese law, over allegations brought by the Tokyo District Public Prosecutor Office 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.

In February 2015, the Japanese Ministry of Health, Labor and Welfare (MHLW) issued a business suspension order for failure to report adverse events, which required NPKK to halt manufacturing and sales in Japan for the period from March 5 to 19, 2015. NPKK has implemented a corrective and preventive action plan in response to a business improvement order and instruction issued by the MHLW in the fourth quarter of 2015 regarding additional instances of delayed adverse events reporting.

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 *MF59* investigation
In May 2014, the public prosecutor of Siena initiated a criminal investigation 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
***Reclast/Aclasta* product liability litigation**
NPC is a defendant in 21 US product liability actions involving *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 claims are being vigorously contested.

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 contesting the claims.

***Tekturna/Rasilez/Valturna* product liability litigation**
NPC and certain other Novartis affiliates are defendants in 12 individual lawsuits pending in the USDC for the District of New Jersey (DNJ), and one in Alberta, Canada, claiming that treatment with *Tekturna*, *Rasilez* and/or *Valturna* caused renal failure, kidney disease or stroke. The claims are being vigorously contested.

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 USD 356 million, at a minimum, together with a request for payment of additional 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. NPC and Sandoz reached settlements in the first, third, and fourth quarters of 2015 of the Wisconsin and Utah claims against them for amounts that are not material to Novartis. Sandoz has filed a motion for reconsideration against a Mississippi Supreme Court decision which in the fourth quarter of 2015 upheld the USD 30 million Chancery Court verdict against it. NPC remains a defendant in an action brought by the state of Illinois and in a putative class action brought by private payors in New Jersey. The claims are being vigorously contested.

***Qui tam* actions**
NPC is a defendant in a relator's *qui tam* action in the USDC for the Eastern District of Pennsylvania 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 relator's action. NPC is vigorously contesting the claims.

In 2006, 2010 and 2012, *qui tam* complaints were filed in the District of Massachusetts (D. Mass.) asserting various federal False Claims Act and state claims relating to certain alleged improper marketing practices involving *Xolair* against various Novartis, Genentech and Roche entities. In 2011, the US and various state governments declined to intervene in the relators' actions, and closed their investigations. In June 2014, the relator in the 2010 action voluntarily dismissed his complaint with prejudice; the US and various states subsequently consented to the dismissal. In the first quarter of 2015, the USDC for the D. Mass. dismissed with prejudice all claims in connection with alleged improper marketing practices asserted by

20. Provisions and Other Non-Current Liabilities (Continued)

the relators and dismissed without prejudice all claims asserted in the name of the federal and various state governments. The relators have appealed. Novartis continues to vigorously contest the claims.

Antitrust class actions
Since the third quarter of 2013, approximately sixteen putative 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 a federal district court in Massachusetts. 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®. Sandoz is vigorously contesting the claims.

Since March 2015, more than 50 putative class action complaints have been filed in several courts across the US naming contact-lens manufacturers, including ALI, and alleging violations of federal antitrust law as well as state antitrust, consumer protection and unfair competition laws of various states in connection with the sale of contact lenses. The cases have been consolidated in the Middle District of Florida by the Judicial Panel on Multidistrict Litigation and the claims are being vigorously contested.

Since June 2015, NPC, Novartis Corporation (NC) and NAG have been sued in five putative class action complaints brought in federal district court in Massachusetts on behalf of proposed classes of all direct and indirect purchasers, including end-payors, of *Gleevec*. The complaints assert violations of federal antitrust law and various state laws, and seek to prevent Novartis from enforcing a previously reported 2014 agreement under which Sun Pharmaceuticals agreed not to launch a generic version of *Gleevec*, until February 1, 2016, as well as damages and other relief. The claims are being vigorously contested.

In October 2015, Sandoz and Momenta Pharmaceuticals were sued in a putative antitrust class action in federal court in Tennessee alleging that Momenta and Sandoz engaged in anticompetitive conduct with regard to sales of enoxaparin, and the same allegations were made by Amphastar in a lawsuit filed in federal court in California (Sandoz, Momenta Pharmaceuticals and Amphastar are currently engaged in litigation concerning certain enoxaparin patents in federal court in Massachusetts). The claims are being vigorously contested.

Oriel litigation
In October 2013, Shareholder Representative Services LLC filed a complaint in New York State Court against Sandoz Inc., two affiliates and two former officers of Sandoz AG asserting various common law and statutory contract, fraud and negligent misrepresentation claims arising out of the Sandoz Inc. purchase of Oriel Therapeutics, Inc. In March 2015, the court dismissed all claims except a breach of contract claim against Sandoz Inc. Sandoz Inc. continues to vigorously contest the claim.

Eye drop products consumer class actions
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 contesting the claims.

Employment action
In March 2015, ALI and NC were sued in an individual and collective action filed in the SDNY. The parties negotiated a class settlement and a settlement for the individual plaintiffs (excluding one plaintiff) for an amount that is not material to Novartis, which settlements and amended complaint were filed with the court for approval in December 2015. The claims assert inter alia gender discrimination, pay discrimination and retaliation at Alcon. The one remaining individual claim continues to be vigorously contested.

CONCLUDED LEGAL MATTERS
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). In the third quarter of 2015, the USAO declined to intervene in the relators' complaint and has closed the investigation.

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 complaint, as subsequently amended, asserted 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*. 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. In the second half of 2015, NPC reached a settlement with all plaintiffs, including the United States Department of Justice, 45 states (made up of the eleven intervening states, as well as all the other states which were either part of the relator's complaint, or which reimbursed prescriptions of *Myfortic* and *Exjade* during the relevant time period), the District of Columbia and the *qui tam* relator. This resolves all the above-described claims related to *Myfortic*, *Exjade*, *Tasigna*, *Gleevec* and *TOBI*. As part of the settlement, NPC agreed to pay USD 390 million plus additional legal expenses to plaintiffs, and agreed with the Office of Inspector General of the US Department of Health & Human Services on an amendment and extension of its current Corporate Integrity Agreement until 2020.

DNJ investigation

In late September 2014, ALI received a subpoena from the USAO for the DNJ relating to an investigation of Alcon sales practices. In the third quarter of 2015, the USAO declined to proceed, and no charges were brought or sanctions imposed. The relator dismissed the complaint voluntarily.

Italy *Sandostatin* investigation

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). In consideration of commitments to amend certain provisions of the co-marketing agreement with Italfarmaco, the ICA decided to close the investigation with no finding of an infringement and thus without a fine. The decision became final in October 2015.

***Zometa/Aredia* product liability litigation**

NPC had been a defendant in more than 880 cases brought in US courts in which plaintiffs generally claimed 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. Nearly all the cases have been resolved through voluntary dismissals, pretrial motion practice, trial, or settlements, the payments of which were not material to Novartis. Three cases where NPC prevailed at the trial level remain on appeal, and one other case remains pending. The remaining claims are being vigorously contested, but they are not material to Novartis.

Solodyn® Federal Trade Commission (FTC) investigation

The conduct challenged in the above-described Solodyn® antitrust class actions has also been the subject of an FTC investigation. In the fourth quarter of 2015, the FTC closed the investigation with no finding of an infringement or a fine. This matter is therefore concluded.

***Excedrin* consumer class actions**

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 not material to Novartis.

SUMMARY OF PRODUCT LIABILITY, GOVERNMENTAL INVESTIGATIONS AND OTHER LEGAL MATTERS PROVISION MOVEMENTS

	2015 USD millions	2014 USD millions
January 1	**849**	**924**
Provisions related to discontinued operations		– 37
Cash payments	– 256	– 454
Releases of provisions	– 223	– 135
Additions to provisions	832	549
Currency translation effects	– 8	2
December 31	**1 194**	**849**
Less current portion	– 743	– 328
Non-current product liabilities, governmental investigations and other legal matters provisions at December 31	**451**	**521**

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 and Derivative Financial Instruments

	2015 USD millions	2014 USD millions
Interest-bearing accounts of associates payable on demand	1 645	1 651
Bank and other financial debt	1 185	1 272
Commercial paper	1 085	648
Current portion of non-current financial debt	1 659	2 989
Fair value of derivative financial instruments	30	52
Total current financial debt and derivative financial instruments	**5 604**	**6 612**

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 2.7% in 2015 and 2.6% in 2014.

Details on commercial papers are provided in Note 29 – Liquidity risk.

22. Provisions and Other Current Liabilities

	2015 USD millions	2014 USD millions
Taxes other than income taxes	551	549
Restructuring provisions	260	333
Accrued expenses for goods and services received but not invoiced	1 124	1 076
Accruals for royalties	550	561
Provisions for revenue deductions	3 790	3 533
Accruals for compensation and benefits including social security	1 932	1 968
Environmental remediation liabilities	80	95
Deferred income	385	329
Provision for product liabilities, governmental investigations and other legal matters	743	328
Accrued share-based payments	209	248
Contingent considerations	78	291
Commitment for repurchase of own shares (see Note 9)		658
Other payables	1 017	479
Total provisions and other current liabilities	**10 719**	**10 448**

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:

	2015 USD millions	2014 USD millions
January 1	**3 533**	**4 182**
Provisions related to discontinued operations		– 234
Impact of business combinations	3	
Additions	15 603	14 119
Payments/utilizations	– 15 218	– 13 907
Changes in offset against gross trade receivables	50	– 420
Currency translation effects	– 181	– 207
December 31	**3 790**	**3 533**

RESTRUCTURING PROVISION MOVEMENTS

	USD millions
January 1, 2014	**174**
Provisions related to discontinued operations	– 4
Additions	504
Cash payments	– 295
Releases	– 52
Currency translation effects	6
December 31, 2014	**333**
Additions	399
Cash payments	– 435
Releases	– 36
Currency translation effects	– 1
December 31, 2015	**260**

In 2015, additions to provisions of USD 399 million in continuing operations were to a large extent related to reorganizations in the Pharmaceuticals Division. Thereby two initiatives totaling USD 106 million were targeted at efficiency gains in the business franchises other than Oncology and Cell and Gene Therapies. The integration of the Oncology business acquired from GSK resulted in restructuring expenses of USD 78 million. Alcon extended its initiative to realize productivity opportunities (USD 45 million). Finally group wide initiatives to simplify the organizational structure (USD 159 million), mainly related to the manufacturing footprint and support services as well as a NIBR initiative (USD 11 million) resulted in an increase of the provision.

In 2014, additions to provisions of USD 504 million in continuing operations were mainly related to reorganizations in the Pharmaceuticals Division. In Pharmaceuticals an initiative in Development totaling USD 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 the Pharmaceuticals Division were also subject to a restructuring program totaling USD 286 million which was targeted at increasing operational leverage. Alcon has established a USD 56 million initiative to realize productivity opportunities.

The releases to income in 2015 of USD 36 million in continuing operations and in 2014 of USD 52 million in continuing operations and USD 5 million in discontinued operations 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	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions
Pharmaceuticals – Research & Development			11	72	11	72
Pharmaceuticals – Business Franchises		8	106	278	106	286
Pharmaceuticals – GSK Oncology Integration			78		78	
Alcon initiative to increase operating leverage			45	56	45	56
Various Group initiatives to simplify organizational structure – including manufacturing sites and support services	31	1	128	89	159	90
Total	**31**	**9**	**368**	**495**	**399**	**504**

[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

	2015 USD millions	2014 USD millions
Taxes	1 106	1 545
Depreciation, amortization and impairments on:		
Property, plant & equipment	1 550	1 630
Intangible assets	3 921	3 052
Financial assets [1]	104	69
Income from associated companies	– 266	– 1 918
Gains on disposal of property, plant & equipment, intangible, financial and other non-current assets, net	– 869	– 622
Equity-settled compensation expense	773	744
Change in provisions and other non-current liabilities	1 642	1 490
Net financial income	1 109	735
Total	**9 070**	**6 725**

[1] Including unrealized fair value gains

23.2) CASH FLOWS FROM CHANGES IN WORKING CAPITAL AND OTHER OPERATING ITEMS INCLUDED IN OPERATING CASH FLOW FROM CONTINUING OPERATIONS

	2015 USD millions	2014 USD millions
Increase in inventories	– 482	– 506
Increase in trade receivables	– 513	– 367
Increase in trade payables	378	142
Change in other net current assets and other operating cash flow items	– 246	106
Total	**– 863**	**– 625**

In 2015, the Group acquired property, plant and equipment of USD 85 million through finance lease contracts.

23.3) CASH FLOW ARISING FROM ACQUISITIONS AND DIVESTMENTS OF BUSINESSES

The following is a summary of the cash flow impact of acquisitions and divestments. The most significant transactions are described in Note 2.

	2015 Acquisitions USD millions	2015 Divestments USD millions	2014 Acquisitions USD millions	2014 Divestments USD millions
Property, plant & equipment		1 000		145
Currently marketed products	– 12 970	646	– 234	91
(Acquired)/divested research & development	– 730	13	– 248	
Technologies		113		
Other intangible assets	– 15	86		
Financial and other assets including deferred tax assets [1]	– 555	40	– 53	7
Inventories		893	– 1	87
Trade receivables and other current assets	– 3	529	– 3	159
Cash and cash equivalents	– 25	311	– 2	
Current and non-current financial debts		– 601		
Trade payables and other liabilities including deferred tax liabilities	212	– 841	186	– 50
Net identifiable assets (acquired) or divested	**– 14 086**	**2 189**	**– 355**	**439**
Currency translation effects		98		– 3
Acquired/(divested) liquidity	25	– 479	2	
Subtotal	**– 14 061**	**1 808**	**– 353**	**436**
Refinancing of intercompany financial debt, net		578		
Goodwill [1]	– 2 438	1 042	– 131	267
Divestment gain		7 401		876
Taxes paid and other portfolio transformation related cash flows		– 1 337		– 566
Receivables and payables contingent consideration, net	– 8	– 519	153	
Prepaid/deferred portion of sales price [2]		– 49		47
Net cash flow	**– 16 507**	**8 924**	**– 331**	**1 060**
Of which:				
Net cash flow from discontinued operations		8 924		1 060
Net cash flow used in continuing operations	– 16 507		– 331	

[1] 2014 Acquisitions include an adjustment regarding a previous acquisition to deferred tax assets of USD 21 million and goodwill of USD 135 million.
[2] Divestments include USD 49 million proceeds for the divestment of the Animal Health business received in 2014.

Notes 2 and 24 provide further information regarding acquisitions and divestments of businesses. All acquisitions were for cash.

23.4) CASH FLOW FROM DISCONTINUED OPERATIONS

	2015 USD millions	2014 USD millions
Cash flows used in operating activities	**– 188**	**– 1**
Purchase of property, plant & equipment	– 41	– 223
Proceeds from sales of property, plant & equipment	1	4
Purchase of intangible assets		– 18
Proceeds from sales of intangible assets		79
Purchase of financial and other non-current assets, net	– 2	– 13
Divestments of businesses [1]	8 924	1 060
Cash flows from investing activities	**8 882**	**889**
Total net cash flows from discontinued operations	**8 694**	**888**

[1] Includes proceeds of USD 10 925 million reduced by USD 2 001 million, for payments of taxes, transaction-related costs and purchase price adjustments.

24. Acquisitions of Businesses

ASSETS AND LIABILITIES ARISING FROM ACQUISITIONS

Fair value	2015 USD millions	2014 USD millions
Currently marketed products	12 970	234
Acquired research & development	730	248
Other intangible assets	15	
Deferred tax assets [1]	555	53
Inventories		1
Trade receivables and other current assets	3	3
Cash and cash equivalents	25	2
Payables and other liabilities including deferred tax liabilities	– 212	– 186
Net identifiable assets acquired	**14 086**	**355**
Acquired liquidity	– 25	– 2
Goodwill [1]	2 438	131
Net assets recognized as a result of business combinations	**16 499**	**484**

[1] 2014 includes an adjustment regarding a previous acquisition to deferred tax assets of USD 21 million and goodwill of USD 135 million.

Note 2 details significant acquisition of businesses, which in 2015, were the GSK Oncology products, Spinifex and Admune. The goodwill arising out of these acquisitions is attributable to buyer specific synergies, assembled workforce and to the accounting for deferred tax liabilities on the acquired assets. Goodwill of USD 2.4 billion is tax deductible. In 2014 the significant transactions related to CoStim Pharmaceuticals and WaveTec.

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. Details of the plans in the two most significant countries of Switzerland and the US are provided below.

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.

In June 2015 the Board of Trustees of the Novartis Swiss Pension Fund agreed to adjust the annuity conversion rate at retirement with effect from January 1, 2016. This amendment does not have an impact on existing members receiving benefits or on plan members, born before January 1, 1956. This amendment resulted in a net pre-tax curtailment gain of USD 110 million (CHF 103 million).

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.

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, 2015 and 2014:

	Pension plans		Other post-employment benefit plans	
	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions
Benefit obligation at January 1	**24 178**	**24 801**	**1 253**	**1 069**
Benefit obligations related to discontinued operations		– 848		– 21
Current service cost	451	418	32	35
Interest cost	399	654	46	49
Past service costs and settlements	– 138	6		– 89
Administrative expenses	23	21		
Remeasurement (gains)/losses arising from changes in financial assumptions	– 16	2 129	– 34	164
Remeasurement (gains)/losses arising from changes in demographic assumptions	– 41	229	– 30	121
Experience related remeasurement losses/(gains)	56	– 14	– 110	– 22
Currency translation effects	– 358	– 2 156	– 14	– 5
Benefit payments	– 1 406	– 1 282	– 50	– 48
Contributions of associates	223	210		
Effect of acquisitions, divestments or transfers	31	10	39	
Benefit obligation at December 31	**23 402**	**24 178**	**1 132**	**1 253**
Fair value of plan assets at January 1	**20 434**	**21 481**	**199**	**209**
Plan assets related to discontinued operations		– 530		
Interest income	300	550	6	10
Return on plan assets excluding interest income	– 286	1 442	– 6	28
Currency translation effects	– 223	– 1 917		
Novartis Group contributions	494	485	23	
Contributions of associates	223	210		
Settlements	– 3	– 9		
Benefit payments	– 1 406	– 1 282	– 50	– 48
Effect of acquisitions, divestments or transfers	3	4		
Fair value of plan assets at December 31	**19 536**	**20 434**	**172**	**199**
Funded status	**– 3 866**	**– 3 744**	**– 960**	**– 1 054**
Limitation on recognition of fund surplus at January 1	**– 58**	**– 45**		
Change in limitation on recognition of fund surplus (incl. exchange rate differences)	12	– 9		
Interest income on limitation of fund surplus	– 4	– 4		
Limitation on recognition of fund surplus at December 31	**– 50**	**– 58**		
Net liability in the balance sheet at December 31	**– 3 916**	**– 3 802**	**– 960**	**– 1 054**

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	
	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions
Net liability at January 1	**– 3 802**	**– 3 365**	**– 1 054**	**– 860**
Less: Net liability related to discontinued operations		318		21
Current service cost	– 451	– 418	– 32	– 35
Net interest expense	– 103	– 108	– 40	– 39
Administrative expenses	– 23	– 21		
Past service costs and settlements	135	– 15		89
Remeasurements	– 285	– 902	168	– 235
Currency translation effects	135	239	14	5
Novartis Group contributions	494	485	23	
Effect of acquisitions, divestments or transfers	– 28	– 6	– 39	
Change in limitation on recognition of fund surplus	12	– 9		
Net liability at December 31	**– 3 916**	**– 3 802**	**– 960**	**– 1 054**
Amounts recognized in the consolidated balance sheet				
Prepaid benefit cost	36	37		
Accrued benefit liability	– 3 952	– 3 839	– 960	– 1 054

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:

	2015 USD millions				2014 USD millions			
	Switzerland	US	Rest of the World	Total	Switzerland	US	Rest of the World	Total
Benefit obligation at December 31	**15 453**	**3 783**	**4 166**	**23 402**	**15 578**	**4 092**	**4 508**	**24 178**
Thereof unfunded		*736*	*466*	*1 202*		*820*	*484*	*1 304*
By type of member								
Active	6 196	990	1 392	8 578	6 268	1 182	1 502	8 952
Deferred pensioners		909	1 489	2 398		947	1 499	2 446
Pensioners	9 257	1 884	1 285	12 426	9 310	1 963	1 507	12 780
Fair value of plan assets at December 31	**14 347**	**2 358**	**2 831**	**19 536**	**14 869**	**2 521**	**3 044**	**20 434**
Funded Status	**– 1 106**	**– 1 425**	**– 1 335**	**– 3 866**	**– 709**	**– 1 571**	**– 1 464**	**– 3 744**

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	
	2015 %	2014 %	2015 %	2014 %
Weighted average assumptions used to determine benefit obligations at December 31				
Discount rate	1.8%	1.8%	4.4%	3.8%
Expected rate of pension increase	0.4%	0.4%		
Expected rate of salary increase	2.9%	3.2%		
Interest on savings account	0.8%	0.9%		
Current average life expectancy for a 65-year-old male/female	21/24 years	21/24 years	21/23 years	22/24 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.

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 2015 year end defined benefit pension obligation USD millions
25 basis point increase in discount rate	– 736
25 basis point decrease in discount rate	781
1 year increase in life expectancy	797
25 basis point increase in rate of pension increase	491
25 basis point decrease in rate of pension increase	– 111
25 basis point increase of interest on savings account	61
25 basis point decrease of interest on savings account	– 60
25 basis point increase in rate of salary increase	69
25 basis point decrease in rate of salary increase	– 71

The healthcare cost trend rate assumptions for other post-employment benefits are as follows:

Healthcare cost trend rate assumptions used	2015	2014
Healthcare cost trend rate assumed for next year	7.5%	7.0%
Rate to which the cost trend rate is assumed to decline	5.0%	5.0%
Year that the rate reaches the ultimate trend rate	2022	2021

The following table shows the weighted average plan asset allocation of funded defined benefit pension plans at December 31, 2015 and 2014:

	Pension plans		
	Long-term target %	2015 %	2014 %
Equity securities	15–40	34	35
Debt securities	20–60	35	34
Real estate	5–20	14	13
Alternative investments	0–20	14	10
Cash and other investments	0–15	3	8
Total		**100**	**100**

25. Post-Employment Benefits for Associates (Continued)

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.

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, 2015, 11 million shares with a market value of USD 1.0 billion (2014: 11 million shares with a market value of USD 1.0 billion). The weighted average duration of the defined benefit obligation is 14.1 years (2014: 14.3 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 UK.

The expected future cash flows in respect of pension and other post-employment benefit plans at December 31, 2015 were as follows:

	Pension plans USD millions	Other post-employment benefit plans USD millions
Novartis Group contributions		
2016 (estimated)	531	58
Expected future benefit payments		
2016	1 201	58
2017	1 232	61
2018	1 239	64
2019	1 243	66
2020	1 236	68
2021–2025	6 113	361

DEFINED CONTRIBUTION PLANS

In many subsidiaries associates are covered by defined contribution plans. Contributions charged to the 2015 consolidated income statement for the defined contribution plans were USD 359 million (2014: USD 348 million). The 2015 amount excludes USD 1 million (2014: USD 14 million) related to discontinued operations.

26. Equity-Based Participation Plans for Associates

The expense related to all equity-based participation plans in the 2015 consolidated income statement was USD 968 million (2014: USD 1.1 billion) resulting in total liabilities arising from equity-based payment transactions of USD 209 million (2014: USD 277 million of which USD 248 million were recognized in continuing operations). Out of the total expense, an amount of USD 903 million (2014: USD 1.0 billion) was recognized in continuing operations and USD 65 million (2014: USD 124 million) was recognized in discontinued operations.

Equity-based participation plans can be separated into the following plans.

ANNUAL INCENTIVE

The Annual Incentive of the CEO and other key executives is paid 50% in cash in February or March of the year following the performance period, and 50% in Novartis restricted 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 do not carry any dividend, dividend equivalent or voting rights. The executives may elect to also receive their cash incentive partially or fully in shares which will not be subject to vesting conditions. In 2015, 14 executives received 0.1 million restricted shares and RSUs.

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 United Kingdom 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 37 key executives were invited to participate in the Leveraged Share Savings Plan (LSSP) based on their performance in 2014. At the participant's election,

the Annual Incentive is awarded partly or entirely in shares. The elected number of shares was delivered in 2015 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 12 796 associates in 2014. 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 5 945 associates chose to receive shares under the ESOP for their performance in 2014 and the invested shares were delivered in 2015.

— In the United Kingdom, 1 618 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 2015, 1 433 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 2015, a total of 4.1 million shares (2014: 4.8 million shares) were delivered to associates in lieu of their annual incentive (in the UK, also their salary).

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 subject to a three year vesting period. 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. 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, RSUs are typically granted. Until 2013, participants could also choose to receive part or the entire grant in the form of tradable share options.

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.

NOVARTIS EQUITY PLAN "SELECT" OUTSIDE NORTH AMERICA

Participants in this plan were granted in 2015 a total of 1.7 million restricted shares and RSUs at CHF 84.75 (2014: 2.1 million restricted shares and RSUs at CHF 73.75).

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 USD at historical rates.

	2015		2014	
	Options (millions)	Weighted average exercise price (USD)	Options (millions)	Weighted average exercise price (USD)
Options outstanding at January 1	**16.1**	**59.2**	**26.4**	**57.3**
Sold or exercised	– 4.1	56.7	– 9.8	54.0
Forfeited or expired	– 0.3	66.0	– 0.5	62.2
Outstanding at December 31	**11.7**	**59.9**	**16.1**	**59.2**
Exercisable at December 31	**7.4**	**56.4**	**7.0**	**55.0**

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 or exercised in 2015 was USD 56.74. The weighted average share price at the dates of sale was USD 97.89.

The following table summarizes information about share options outstanding at December 31, 2015:

	Options outstanding		
Range of exercise prices (USD)	Number outstanding (millions)	Average remaining contractual life (years)	Weighted average exercise price (USD)
45–49	0.8	3.0	46.8
50–54	1.6	3.1	54.4
55–59	4.6	4.1	57.8
65–70	4.7	7.0	66.0
Total	**11.7**	**5.1**	**59.9**

NOVARTIS EQUITY PLAN "SELECT" FOR NORTH AMERICA

Participants in this plan were granted a total of 3.9 million RSUs at USD 98.75 (2014: 5.1 million RSUs at USD 80.79).

The following table shows the activity associated with the American Depositary Receipts (ADR) options during the period:

26. Equity-Based Participation Plans for Associates (Continued)

	2015		2014	
	ADR options (millions)	Weighted average exercise price (USD)	ADR options (millions)	Weighted average exercise price (USD)
Options outstanding at January 1	**44.4**	**59.6**	**58.8**	**58.9**
Sold or exercised	– 11.8	57.8	– 12.2	55.5
Forfeited or expired	– 0.7	63.3	– 2.2	62.6
Outstanding at December 31	**31.9**	**60.2**	**44.4**	**59.6**
Exercisable at December 31	**19.2**	**56.3**	**16.3**	**54.7**

All ADR options were granted at an exercise price which was equal to the closing market price of the ADRs at the grant date. The weighted average exercise price during the period the ADR options were sold or exercised in 2015 was USD 57.75. The weighted average ADR price at the dates of sale or exercise was USD 100.58.

The following table summarizes information about ADR options outstanding at December 31, 2015:

	ADR options outstanding		
Range of exercise prices (USD)	Number outstanding (millions)	Average remaining contractual life (years)	Weighted average exercise price (USD)
45–49	2.4	3.0	46.4
50–54	3.1	3.5	53.8
55–59	12.7	5.0	58.0
65–69	13.7	7.0	66.1
Total	**31.9**	**5.6**	**60.2**

LONG-TERM PERFORMANCE PLANS

In 2014, a new LTPP was introduced for the CEO and other key executives designed to not only drive long-term shareholder value, but also innovation. From 2015 onwards, this LTPP was extended to all key executives who previously participated in the now discontinued Old LTPP (OLTPP).

The rewards of the LTPP are based on three year performance objectives focused on financial and innovation measures. The financial measure is Novartis Cash Value Added (NCVA). The weighting of this measure is 75%. The NCVA target is approved by the Board of Directors.

The innovation measure is based on a holistic approach under which divisional innovation targets are set at the beginning of the cycle, comprised of up 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 Research & Development Committee assists the Board of directors and the Compensation Committee in evaluating performance against the innovation targets at the end of the cycle. The weighting of this measure is 25%.

Until 2014 (2013 for the CEO and other key executives), the OLTPP was available. The rewards are based on rolling three year performance objectives focused on the Novartis Economic Value Added (NVA). 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. The payout is capped at 200% of target.

Under the LTPP and OLTPP, 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. 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. PSUs granted under the OLTPPs do not carry any dividend, dividend equivalent or voting rights.

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 2015, 0.4 million LTPP PSUs (2014: 0.3 million LTPP PSUs) based on achieving 100% of target were granted to 164 key executives. No PSUs were granted in 2015 under the OLTPP (2014: 0.2 million OLTPP PSUs).

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 and ranges from 30% to 90% for other key executives. 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 USD 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 48.58 and USD 56.60 as of the grant date. In 2015, a total of 0.1 million LTRPP PSUs (2014: 0.1 million LTRPP PSUs) based on achieving 100% of target were granted to 12 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 848 associates at different levels in the organization were awarded 0.8 million restricted shares and RSUs in 2015 (2014: 0.8 million restricted shares and RSUs).

In addition, in 2015, Board members received 32 087 unrestricted shares as part of their regular compensation.

SUMMARY OF NON-VESTED SHARE MOVEMENTS

The table below provides a summary of non-vested share movements (restricted shares, RSUs and PSUs) for all plans:

	2015		2014	
	Number of shares in millions	Fair value in USD millions	Number of shares in millions	Fair value in USD millions
Non-vested shares at January 1	**24.2**	**1 702.5**	**23.1**	**1 370.6**
Granted	12.4	1 157.0	14.5	1 153.4
Vested	– 14.4	– 968.9	– 11.5	– 709.2
Forfeited	– 2.1	– 139.6	– 1.9	– 112.3
Non-vested shares at December 31	**20.1**	**1 751.0**	**24.2**	**1 702.5**

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 2015 and 2014, although certain of the unvested awards under the Alcon equity plans continued to have 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.

The following table shows the activity associated with the converted Novartis share options and SSARs during 2015 and 2014:

	Number of options (millions)	Weighted average exercise price (USD)	Number of SSARs (millions)	Weighted average exercise price (USD)
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**
Outstanding at January 1, 2015	**0.7**	**30.1**	**2.4**	**35.6**
Exercised	– 0.5	27.4	– 0.6	32.5
Outstanding at December 31, 2015	**0.2**	**36.8**	**1.8**	**36.6**
Exercisable at December 31, 2015	**0.2**	**36.8**	**1.8**	**36.6**

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 2015, *Lucentis* sales of USD 2.1 billion (2014: USD 2.4 billion) have been recognized by Novartis.

In November 2015, Genentech/Roche entered into an agreement with Novartis resulting from an opt-in right related to Novartis entering into a Licensing and Commercialization agreement with Ophthotech Corporation to commercialize pegpleranib (otherwise known as *Fovista* and OAP030) to treat wet age-related macular degeneration (AMD) and various presentations or combinations with pegpleranib outside of the United States. Pursuant to the agreement, Novartis and Genentech/Roche will share in some development costs related to pegpleranib and if development is successful, Novartis will pay royalties on the net sales of pegpleranib outside of the United States.

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.

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 2015, Novartis recognized total sales of *Xolair* of USD 755 million (2014: USD 777 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 USD 309 million in 2015 (2014: USD 536 million).

Furthermore, Novartis has several patent license, supply and distribution agreements with Roche.

EXECUTIVE OFFICER AND NON-EXECUTIVE DIRECTOR COMPENSATION

During 2015, there were 11 Executive Committee members ("Executive Officers"), including those who stepped down during the year (14 members in 2014 also including those who stepped down).

The total compensation for members of the Executive Committee and the 12 Non-Executive Directors (14 in 2014) using the Group's accounting policies for equity-based compensation and pension benefits was as follows:

	Executive Officers		Non-Executive Directors		Total	
	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions
Benefits other than equity-based amounts	17.1	18.3	4.7	6.2	21.8	24.5
Post-employment benefits	1.9	2.1		0.1	1.9	2.2
Equity-based compensation	52.9	81.7	4.4	4.9	57.3	86.6
Total	**71.9**	**102.1**	**9.1**	**11.2**	**81.0**	**113.3**

During 2015, there was a decrease in the IFRS compensation expense for Executive Committee members compared to 2014 mainly due to the decrease in number of Executive Committee members.

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.

The disclosures required by the Swiss Code of Obligations and in accordance with the Swiss Ordinance against Excessive Compensation in Stock Exchange Listed Companies on Board and Executive compensation are shown in the Compensation Report.

TRANSACTIONS WITH FORMER MEMBERS OF THE BOARD OF DIRECTORS

During 2015 and 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:

Prof. Dr. William R. Brody and Prof. Dr. Rolf M. Zinkernagel, who stepped down from the Board of Directors at the 2014 AGM, received delegated Board membership fees for their work on the Boards of the Novartis Institute for Tropical Diseases (Prof. Dr. Zinkernagel) and the Genomics Institute of the Novartis Research Foundation (Prof. Dr. Brody and Prof. Dr. Zinkernagel). During 2015, an amount of CHF 100 000 and CHF 200 000 was paid to Prof. Dr. Brody and Prof. Dr. Zinkernagel, respectively, for their work on these Boards. Their mandate on the Board of the Genomics Institute of the Novartis Research Foundation ended as of November 19, 2015.

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. An amount of CHF 60 000 was paid to Dr. Krauer during 2015. Due to a change in the timing of payments, an amount of CHF 45 000 was paid to Dr. Krauer, during 2014.

In 2015, Dr. Daniel Vasella, Honorary Chairman, received the contractual minimum compensation of USD 250 000 (2014: USD 363 552) under an agreement which became effective on November 1, 2013 and will last until the end of 2016. Under this agreement, Dr. Vasella is compensated at a rate of USD 25 000 per day, with an annual guaranteed minimum fee of USD 250 000. This amount is in line with compensation practices at other large companies when retired Chairmen or CEOs were retained in consulting agreements after leaving the board of directors.

In 2014, Dr. Vasella acquired an asset from a consolidated entity at fair value and exercised an option to acquire, at a future date, real estate in Risch, Zug, Switzerland. The real estate transaction closed in 2015 and Dr. Vasella acquired the Group assets from a consolidated entity for an arm's length transaction price determined on the basis of two independent external assessments.

TRANSACTIONS WITH A FUTURE EXECUTIVE OFFICER

As announced on September 24, 2015, Dr. James E. Bradner will succeed Dr. Mark Fishman as President of the Novartis Institutes for BioMedical Research (NIBR) and member of the ECN with effect from March 1, 2016. In 2015, a subsidiary acquired Dr. Bradner's 10 million shares (7% interest) in a non-material entity for USD 10 million. The arm's length transaction price was determined based on the most recent round of financing of this entity.

The above disclosures related to Dr. Vasella and Dr. Bradner 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, 2015 the Group's commitments with respect to these leases, including estimated payment dates, were as follows:

	2015 USD millions
2016	273
2017	202
2018	133
2019	103
2020	104
Thereafter	2 181
Total	**2 996**
Expense of current year	**313**

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, 2015 the Group's commitments to make payments under those agreements, and their estimated timing, were as follows:

	Unconditional commitments USD millions	Potential milestone payments USD millions	Total 2015 USD millions
2016	88	601	689
2017	61	343	404
2018	86	438	524
2019	65	152	217
2020	200	474	674
Thereafter	150	397	547
Total	**650**	**2 405**	**3 055**

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. While provisions have been made for probable losses, which management deems to be reasonable or appropriate, there are uncertainties connected with these estimates.

Note 20 contains a more extensive discussion of these matters.

A number of Group companies are involved in legal proceedings concerning intellectual property rights. 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.

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	2015 USD millions[1]	2014 USD millions[1]
Cash and cash equivalents	16	**4 674**	**13 023**
Financial assets – measured at fair value through other comprehensive income			
Available-for-sale marketable securities			
Debt securities	16	339	327
Equity securities	16	6	15
Fund investments	16	33	35
Total available-for-sale marketable securities		**378**	**377**
Available-for-sale long-term financial investments			
Equity securities	13	1 173	937
Fund investments	13	90	71
Contingent consideration receivables	13	550	
Total available-for-sale long-term financial investments		**1 813**	**1 008**
Total financial assets – measured at fair value through other comprehensive income		**2 191**	**1 385**
Financial assets – measured at amortized costs			
Trade receivables and other current assets (excluding pre-payments)	15/17	10 551	10 255
Accrued interest on debt securities and time deposits	16	2	3
Time deposits with original maturity more than 90 days	16	164	6
Long-term loans and receivables from customers and finance lease, advances, security deposits	13	653	712
Total financial assets – measured at amortized costs		**11 370**	**10 976**
Financial assets – measured at fair value through the consolidated income statement			
Associated companies at fair value through profit and loss		181	234
Derivative financial instruments	16	143	356
Total financial assets – measured at fair value through the consolidated income statement		**324**	**590**
Total financial assets		**18 559**	**25 974**
Financial liabilities – measured at amortized costs			
Current financial debt			
Interest bearing accounts of associates payable on demand	21	1 645	1 651
Bank and other financial debt	21	1 185	1 272
Commercial paper	21	1 085	648
Current portion of non-current debt	21	1 659	2 989
Total current financial debt		**5 574**	**6 560**
Non-current financial debt			
Straight bonds	19	17 193	15 982
Liabilities to banks and other financial institutions	19	706	803
Finance lease obligations	19	87	3
Current portion of non-current debt	19	– 1 659	– 2 989
Total non-current financial debt		**16 327**	**13 799**
Trade payables and commitment for repurchase of own shares (see Note 22)		**5 668**	**6 077**
Total financial liabilites – measured at amortized costs		**27 569**	**26 436**
Financial liabilities – measured at fair value through the consolidated income statement			
Contingent consideration (see Note 20/22) and other financial liabilities		1 105	756
Derivative financial instruments	21	30	52
Total financial liabilities – measured at fair value through the consolidated income statement		**1 135**	**808**
Total financial liabilities		**28 704**	**27 244**

[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, 2015 and 2014. 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 use observable market inputs at December 31, 2015 and 2014.

	Contract or underlying principal amount		Positive fair values		Negative fair values	
	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions	2015 USD millions	2014 USD millions
Currency related instruments						
Forward foreign exchange rate contracts	8 795	10 072	142	283	– 30	– 52
Over-the-Counter currency options	459	1 715	1	73		
Total of currency related instruments	**9 254**	**11 787**	**143**	**356**	**– 30**	**– 52**
Total derivative financial instruments included in marketable securities and in current financial debts	**9 254**	**11 787**	**143**	**356**	**– 30**	**– 52**

The following table shows by currency contract or underlying principal amount the derivative financial instruments at December 31, 2015 and 2014:

December 31, 2015	EUR USD millions	USD USD millions	JPY USD millions	Other USD millions	Total USD millions
Currency related instruments					
Forward foreign exchange rate contracts	2 828	4 713	42	1 212	8 795
Over-the-Counter currency options	459				459
Total of currency related instruments	**3 287**	**4 713**	**42**	**1 212**	**9 254**
Total derivative financial instruments	**3 287**	**4 713**	**42**	**1 212**	**9 254**

December 31, 2014	EUR USD millions	USD USD millions	JPY USD millions	Other USD millions	Total USD millions
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**

DERIVATIVE FINANCIAL INSTRUMENTS EFFECTIVE FOR HEDGE ACCOUNTING PURPOSES

At the end of 2015 and 2014, there were no open hedging instruments for anticipated transactions.

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.

2015	Level 1 USD millions	Level 2 USD millions	Level 3 USD millions	Valued at amortized cost USD millions	Total USD millions
Financial assets					
Debt securities	316	23			339
Equity securities	6				6
Fund investments	29		4		33
Total available-for-sale marketable securities	**351**	**23**	**4**		**378**
Time deposits with original maturity more than 90 days				164	164
Derivative financial instruments		143			143
Accrued interest on debt securities				2	2
Total marketable securities, time deposits and derivative financial instruments	**351**	**166**	**4**	**166**	**687**
Available-for-sale financial investments	700		473		1173
Fund investments			90		90
Contingent consideration receivables			550		550
Long-term loans and receivables from customers and finance lease, advances, security deposits				653	653
Financial investments and long-term loans	**700**		**1 113**	**653**	**2 466**
Associated companies at fair value through profit and loss			**181**		**181**
Financial liabilities					
Contingent consideration payables			– 790		– 790
Other financial liabilities			– 315		– 315
Derivative financial instruments		– 30			– 30
Total financial liabilities at fair value		**– 30**	**– 1105**		**– 1135**

2014	Level 1 USD millions	Level 2 USD millions	Level 3 USD millions	Valued at amortized cost USD millions	Total USD millions
Financial assets					
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 lease, advances, security deposits				712	712
Financial investments and long-term loans	**605**		**403**	**712**	**1 720**
Associated companies at fair value through profit and loss	**66**		**168**		**234**
Financial liabilities					
Contingent consideration payables			– 756		– 756
Derivative financial instruments		– 52			– 52
Total financial liabilities at fair value		**– 52**	**– 756**		**– 808**

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:

2015	Associated Companies at fair value through profit and loss USD millions	Fund investments USD millions	Available-for-sale financial investments USD millions	Contingent Consideration Receivables and other current financial assets USD millions	Contingent consideration payables and other financial liabilities USD millions
January 1	**168**	**77**	**332**		**756**
Impact of business combinations				75	
Fair value gains and other adjustments, including from divestments recognized in the consolidated income statement	9	7	41	1 000	
Fair value losses (including impairments and amortizations) and other adjustments recognized in the consolidated income statement	– 25	– 1	– 35	– 75	644
Gains recognized in the consolidated statement of comprehensive income		17	22		
Purchases	62	24	142		255
Cash receipts and payments				– 450	– 550
Proceeds from sales		– 15	– 56		
At equity investments reclassified due to loss of significant influence			18		
Reclassification	– 33	– 15	9		
Currency translation effects					
December 31	**181**	**94**	**473**	**550**	**1 105**
Total of fair value gains and losses recognized in the consolidated income statement for assets and liabilities held at December 31, 2015	– 16	6	6	925	644

2014	Associated Companies at fair value through profit and loss USD millions	Equity securities USD millions	Fund investments USD millions	Available-for-sale financial investments USD millions	Contingent consideration payables USD millions
January 1	**0**	**26**	**63**	**366**	**572**
Fair value gains recognized in the consolidated income statement	12		2	17	51
Fair value losses (including impairments and amortizations) recognized in the consolidated income statement	– 24			– 51	– 20
Gains recognized in the consolidated statement of comprehensive income		3	3	7	
Purchases	27		7	140	153
Proceeds from sales	– 26		– 9	– 23	
Reclassification	179	– 29	16	– 114	
Currency translation effects			– 5	– 10	
December 31	**168**	**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	– 12		2	– 34	31

No significant transfers from one level to the other occurred during the reporting period. Realized 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 realized gains and losses associated with Level 3 available-for-sale financial investments are recorded in the consolidated income statement under “Other income” or “Other expense”, respectively.

If the pricing parameters for the Level 3 input were to change for associated companies at fair value through profit and loss, equity securities, fund investments 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 USD 75 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 inputs used are the probability of success, sales forecast and assumptions regarding the

discount rate, timing and different scenarios of triggering events. The inputs are interrelated. If the most significant parameters for the Level 3 input were to change by 10% positively or negatively, or where the probability of success (POS) is the most significant input parameter 10% were added or deducted from the applied POS for contingent consideration payables and other financial liabilities and contingent consideration receivables and other current financial assets, this would change the amounts recorded in the consolidated income statement by USD 201 million and USD 196 million, respectively.

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 USD 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 US dollar 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.

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 USD 0.2 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, 2015 amounted to USD 0.3 billion.

In 2014 and through October 2015, the exchange rate used by the Group for consolidation of the financial statements of its Venezuela subsidiaries was the official exchange rate for the Venezuela bolivar (VEF) of VEF 6.3/USD, which is available for imports of specific goods and services of national priority, including medicines and medical supplies, as published by the Centro Nacional de Comercio Exterior (CENCOEX, formerly CADIVI).

In November 2015, a Venezuela subsidiary of the Group agreed with CENCOEX to settle a substantial part of our intercompany trade payables dated on or before December 31, 2014 in a transaction that required the Venezuela subsidiary to purchase a USD denominated bond at par value issued by Petróleos de Venezuela (PDVSA), with a coupon rate of 6% per annum maturing in 2024. In Venezuela there are differing official exchange rates against the USD and for the settlement of these intercompany trade payables, through the purchase of the USD bond, CENCOEX set the exchange rate at VEF 11.0/USD. As a result, from November 2015 the Group changed its exchange rate used for consolidation of the financial statements of its Venezuela subsidiaries. The use of the new exchange rate by the Venezuela subsidiaries resulted in a USD 211 million loss from the re-measurement of the intra-Group and third party liabilities.

Novartis seeks to manage currency exposure by engaging in hedging transactions where management deems appropriate. Novartis 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.

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.

29. Financial Instruments – additional disclosures (Continued)

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 accounted for approximately 14% of net sales, and the second and third largest customers account for 11% and 5% of net sales, respectively (2014: 12%, 11% and 5% 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 13%, 9% and 6%, respectively, of the Group's trade receivables at December 31, 2015. There is no other significant concentration of credit risk (2014: 13%, 9% 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 A- rated. Counterparty credit risk and settlement risk are reduced by a policy of entering into transactions with counterparties (banks or financial 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 21.8%, 9.6% and 8.6%, respectively (2014: 11.8%, 7.7% and 7.7%, 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.

Novartis has two US commercial paper programs under which it can issue up to USD 9 billion in the aggregate of unsecured commercial paper notes. Novartis also has a Japanese commercial paper program under which it can issue up to JPY 150 billion (approximately USD 1.25 billion) of unsecured commercial paper notes. Commercial paper notes totaling USD 1.1 billion under these three programs were outstanding as per December 31, 2015. Novartis further has a committed credit facility of USD 6 billion, entered into on September 23, 2015. This credit facility is provided by a syndicate of banks and is intended to be used as a backstop for the US commercial paper programs. It matures in September 2020 and was undrawn as per December 31, 2015.

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, 2015 and 2014:

December 31, 2015	Due within one month USD millions	Due later than one month but less than three months USD millions	Due later than three months but less than one year USD millions	Due later than one year but less than five years USD millions	Due after five years USD millions	Total USD millions
Current assets						
Marketable securities and time deposits	22	11	200	247	62	542
Commodities					86	86
Derivative financial instruments and accrued interest	40	67	38			145
Cash and cash equivalents	4 674					4 674
Total current financial assets	**4 736**	**78**	**238**	**247**	**148**	**5 447**
Non-current liabilities						
Financial debt				– 4 664	– 11 663	– 16 327
Financial debt – undiscounted				*– 4 676*	*– 11 797*	*– 16 473*
Total non-current financial debt				**– 4 664**	**– 11 663**	**– 16 327**
Current liabilities						
Financial debt	– 3 258	– 289	– 2 027			– 5 574
Financial debt – undiscounted	*– 3 258*	*– 289*	*– 2 028*			*– 5 575*
Derivative financial instruments	– 8	– 20	– 2			– 30
Total current financial debt	**– 3 266**	**– 309**	**– 2 029**			**– 5 604**
Net debt	**1 470**	**– 231**	**– 1 791**	**– 4 417**	**– 11 515**	**– 16 484**

December 31, 2014	Due within one month USD millions	Due later than one month but less than three months USD millions	Due later than three months but less than one year USD millions	Due later than one year but less than five years USD millions	Due after five years USD millions	Total USD millions
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**

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, 2015	Due within one month USD millions	Due later than one month but less than three months USD millions	Due later than three months but less than one year USD millions	Total USD millions
Derivative financial instruments and accrued interest on derivative financial instruments				
Potential outflows in various currencies – from financial derivative liabilities	– 1 418	– 2 800	– 1 602	– 5 820
Potential inflows in various currencies – from financial derivative assets	1 448	2 819	1 601	5 868

December 31, 2014	Due within one month USD millions	Due later than one month but less than three months USD millions	Due later than three months but less than one year USD millions	Total USD millions
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

Other contractual liabilities which are not part of management's monitoring of the net debt or liquidity consist of the following items:

December 31, 2015	Due later than one month but less than three months USD millions	Due later than three months but less than one year USD millions	Due later than one year but less than five years USD millions	Due after five years USD millions	Total USD millions
Contractual interest on non-current liabilities	– 104	– 499	– 1 878	– 4 332	– 6 813
Trade payables	– 5 668				– 5 668

December 31, 2014	Due later than one month but less than three months USD millions	Due later than three months but less than one year USD millions	Due later than one year but less than five years USD millions	Due after five years USD millions	Total USD millions
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

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 debt/equity ratio decreased to 0.28:1 at December 31, 2015 compared to 0.29:1 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 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:

	2015 USD millions	2014 USD millions
All financial instruments	387	272
Analyzed by components:		
Instruments sensitive to foreign currency exchange rates	224	272
Instruments sensitive to equity market movements	50	48
Instruments sensitive to interest rates	353	254

The average, high, and low VAR amounts are as follows:

2015	Average USD millions	High USD millions	Low USD millions
All financial instruments	337	387	237
Analyzed by components:			
Instruments sensitive to foreign currency exchange rates	313	418	173
Instruments sensitive to equity market movements	55	111	33
Instruments sensitive to interest rates	294	380	251

2014	Average USD millions	High USD millions	Low USD millions
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

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 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-month period with the worst performance observed over the past twenty years in each category. For 2015 and 2014, the worst case loss scenario was calculated as follows:

	2015 USD millions	2014 USD millions
All financial instruments	12	16
Analyzed by components:		
Instruments sensitive to foreign currency exchange rates	1	1
Instruments sensitive to equity market movements	4	8
Instruments sensitive to interest rates	7	7

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. Discontinued Operations

DISCONTINUED OPERATIONS CONSOLIDATED INCOME STATEMENT SEGMENTATION

	Vaccines		Consumer Health[1]		Corporate (including eliminations)		Total discontinued operations	
(USD millions)	2015	2014	2015	2014	2015	2014	2015	2014
Net sales to third parties of discontinued operations	**145**	**1 537**	**456**	**4 279**			**601**	**5 816**
Sales to continuing segments	18	65	1	13			19	78
Net sales of discontinued operations	**163**	**1 602**	**457**	**4 292**			**620**	**5 894**
Other revenues	18	32	5	33			23	65
Cost of goods sold	– 192	– 1 336	– 184	– 1 737			– 376	– 3 073
Gross profit of discontinued operations	**– 11**	**298**	**278**	**2 588**			**267**	**2 886**
Marketing & Sales	– 57	– 280	– 187	– 1 532			– 244	– 1 812
Research & Development	– 151	– 545	– 30	– 312			– 181	– 857
General & Administration	– 26	– 118	– 32	– 313			– 58	– 431
Other income	2 870	905	10 558	99	– 8	3	13 420	1 007
Other expense	– 57	– 812	– 14	– 60	– 656	– 274	– 727	– 1 146
Operating income/loss of discontinued operations	**2 568**	**– 552**	**10 573**	**470**	**– 664**	**– 271**	**12 477**	**– 353**
Income from associated companies	2	2					2	2
Income/loss before taxes of discontinued operations							**12 479**	**– 351**
Taxes							– 1 713	– 96
Net income/loss of discontinued operations							**10 766**	**– 447**

[1] Consumer Health is the aggregation of the OTC and Animal Health divisions.

The following are included in net income from discontinued operations:

	2015 USD millions	2014 USD millions
Depreciation of property, plant & equipment		– 66
Amortization of intangible assets		– 77
Impairment charges on property, plant & equipment, net	83	– 736
Impairment charges on intangible assets, net		– 405
Additions to restructuring provisions	– 1	– 14
Equity-based compensation of Novartis equity plans	– 65	– 124

DISCONTINUED OPERATIONS CONSOLIDATED BALANCE SHEET

	2014 USD millions
Assets of disposal groups classified as discontinued operations	
Property, plant and equipment	1 411
Goodwill	1 119
Intangible assets other than goodwill	1 343
Investments in associated companies	1
Deferred tax assets	304
Other non-current assets	47
Inventories	1 155
Trade receivables	1 085
Other current assets	336
Total	**6 801**

	2014 USD millions
Liabilities of disposal groups classified as discontinued operations	
Deferred tax liabilities	209
Provisions and other non-current liabilities	497
Trade payables	612
Current income tax liabilities	176
Provisions and other current liabilities	924
Total	**2 418**

31. Events Subsequent to the December 31, 2015 Consolidated Balance Sheet Date

DIVIDEND PROPOSAL FOR 2015 AND APPROVAL OF THE GROUP'S 2015 CONSOLIDATED FINANCIAL STATEMENTS

On January 26, 2016, the Novartis AG Board of Directors proposed the acceptance of the 2015 consolidated financial statements of the Novartis Group for approval by the Annual General Meeting on February 23, 2016. Furthermore, also on January 26, 2016, the Board proposed a dividend of CHF 2.70 per share to be approved at the Annual General Meeting on February 23, 2016. If approved, total dividend payments would amount to approximately USD 6.6 billion (2014: USD 6.6 billion) using the CHF/USD December 31, 2015 exchange rate.

32. Principal Group Subsidiaries and Associated Companies

The following table lists the principal subsidiaries controlled by Novartis and associated companies in which Novartis is deemed to have significant influence. The equity interest percentage shown in the table also represents the share in voting rights in those entities, except where explicitly noted.

As at December 31, 2015	Share/paid-in capital [1]	Equity interest %	Activities
Algeria			
Société par actions SANDOZ, Algiers	DZD 650.0 m	100	◆▼
Argentina			
Novartis Argentina S.A., Buenos Aires	ARS 246.3 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	◆
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	◆
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 100 000	100	■◆▼▲
Trinity River Insurance Co. Ltd., Hamilton	USD 370 000	100	■
Novartis Investment Limited, Hamilton	USD 30 000	100	■
Novartis Pharmaceutical Proprietary Ltd., Hamilton	CHF 100 000	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	◆▼▲
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	◆▼▲
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	USD 30.0 m	100	◆▼
Novartis Pharmaceuticals (HK) Limited, Hong Kong	HKD 200	100	◆
China Novartis Institutes for BioMedical Research Co., Ltd., Shanghai	USD 260.0 m	100	▲
Suzhou Novartis Pharma Technology Co., Ltd., Changshu	USD 103.4 m	100	▼
Shanghai Novartis Trading Ltd., Shanghai	USD 3.1 m	100	◆▼
Alcon Hong Kong Limited, Hong Kong	HKD 77 000	100	◆
Alcon (China) Ophthalmic Product Co., Ltd., Beijing	USD 2.2 m	100	◆
Sandoz (China) Pharmaceutical Co., Ltd., Zhongshan	USD 36.5 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	◆
Alcon Pharmaceuticals (Czech Republic) s.r.o., Prague	CZK 31.0 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 10.0 m	100	◆
Ecuador			
Novartis Ecuador S.A., Quito	USD 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	◆

As at December 31, 2015	Share/paid-in capital [1]	Equity interest %	Activities
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	◆▲
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 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	■◆▼▲
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	▼
Israel			
Novartis Israel Ltd., Petach Tikva	ILS 1 000	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 1.7 m	100	◆
Sandoz Industrial Products S.p.A., Rovereto	EUR 2.6 m	100	▼
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	◆▼▲
Luxembourg			
Novartis Investments S.à r.l., Luxembourg-Ville	USD 100.0 m	100	■
Novartis Finance S.A., Luxembourg-Ville	USD 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	◆▼
Morocco			
Novartis Pharma Maroc SA, Casablanca	MAD 80.0 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 907 560	100	◆▼
New Zealand			
Novartis New Zealand Ltd., Auckland	NZD 820 000	100	◆
Norway			
Novartis Norge AS, Oslo	NOK 1.5 m	100	◆▲

As at December 31, 2015	Share/paid-in capital [1]	Equity interest %	Activities
Pakistan			
Novartis Pharma (Pakistan) Limited, Karachi	PKR 3.9 bn	100	◆
Panama			
Novartis Pharma (Logistics), Inc., Ciudad de Panama	USD 10 000	100	◆
Alcon Centroamerica S.A., Ciudad de Panama	PAB 1 000	100	◆
Philippines			
Novartis Healthcare Philippines, Inc., Makati/Manila	PHP 298.8 m	100	◆
Sandoz Philippines Corporation, Manila	PHP 30.0 m	100	◆▼
Alcon Laboratories (Philippines), Inc., Manila	PHP 16.5 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	◆▼
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 Lda., Porto Salvo	EUR 499 900	100	◆
Puerto Rico			
Alcon (Puerto Rico) Inc., Catano	USD 15.5	100	◆
Romania			
Sandoz S.R.L., Targu-Mures	RON 105.2 m	100	◆▼
Novartis Pharma Services Romania S.R.L., Bucharest	RON 3.0 m	100	◆
Alcon Romania S.R.L., Bucharest	RON 10.8 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 1.3 bn	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	▼
Alcon Pte Ltd., Singapore	SGD 164 000	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	◆
Sandoz Korea Ltd., Seoul	KRW 17.8 bn	100	◆
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	◆▼▲
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	◆
Switzerland (continued)			
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	◆
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 302.0 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	◆▼
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 250.0 m	100	▼
Alcon Eye Care (UK) Limited, Frimley/Camberley	GBP 550 000	100	◆
Sandoz Limited, Frimley/Camberley	GBP 2.0 m	100	◆
Glaxosmithkline Consumer Healthcare Holdings Limited, Brentford, Middlesex	GBP 100 000	36.5	■
United States of America			
Novartis Corporation, East Hanover, NJ	USD 72.2 m	100	■
Novartis Finance Corporation, New York, NY	USD 1 002	100	■
Novartis Capital Corporation, New York, NY	USD 1	100	■
Novartis Pharmaceuticals Corporation, East Hanover, NJ	USD 5.2 m	100	◆▼▲
Novartis Institutes for BioMedical Research, Inc., Cambridge, MA	USD 1	100	▲
CoStim Pharmaceuticals, Inc., Cambridge, MA	USD 1	100	▲
Novartis Institute for Functional Genomics, Inc., San Diego, CA	USD 21 000	100	▲
Genoptix, Inc., Carlsbad, CA	USD 1	100	◆▲
Alcon Laboratories, Inc., Fort Worth, TX	USD 1 000	100	■◆▼
Alcon Refractive Horizons, LLC, Fort Worth, TX	USD 10	100	▼
Alcon Research, Ltd., Fort Worth, TX	USD 12.5	100	▼▲
Alcon LenSx, Inc., Alisio Viejo, CA	USD 100	100	▼
WaveTec Vision Systems, Inc., Alisio Viejo, CA	USD 1	100	◆▼▲
Sandoz Inc., Princeton, NJ	USD 25 000	100	◆▼▲
Fougera Pharmaceuticals, Inc., Melville, NY	USD 1	100	◆▼▲
Eon Labs, Inc., Princeton, NJ	USD 1	100	◆▼
Novartis Vaccines and Diagnostics, Inc., Cambridge, MA	USD 3.0	100	◆
Novartis Services, Inc., East Hanover, NJ	USD 1	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 and associated companies in the following countries: Bosnia/Herzegovina, Bulgaria, Dominican Republic, Guatemala, the Former Yugoslav Republic of Macedonia, Peru, 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

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 and Development:** This entity performs research and development activities for the Group.

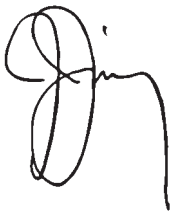
Report of Novartis Management on Internal Control over Financial Reporting

The Board of Directors and management of the Group are responsible for establishing and maintaining adequate internal control over financial reporting. The Novartis Group's internal control system was designed to provide reasonable assurance to the Novartis 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.

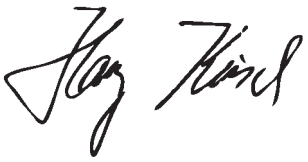
All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective may not prevent or detect misstatements and can provide only reasonable assurance with respect to financial statement preparation and presentation. Also, projections 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.

Novartis Group management assessed the effectiveness of the Group's internal control over financial reporting as of December 31, 2015. 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 its assessment, management has concluded that, as of December 31, 2015, the Novartis Group's internal control over financial reporting was effective based on those criteria.

PricewaterhouseCoopers AG, Switzerland, 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 in this financial report on the following pages 243 and 244.



Joseph Jimenez
Chief Executive Officer



Harry Kirsch
Chief Financial Officer

Basel, January 26, 2016

Report of the Statutory Auditor on the Consolidated Financial Statements of Novartis AG and Internal Control over Financial Reporting

TO THE GENERAL MEETING OF NOVARTIS AG, BASEL

REPORT OF THE STATUTORY AUDITOR ON THE CONSOLIDATED FINANCIAL STATEMENTS

As statutory auditor, we have audited the consolidated financial statements of Novartis AG and its consolidated subsidiaries ("Novartis Group"), which comprise the consolidated income statements, consolidated statements of comprehensive income, consolidated statements of changes in equity, consolidated balance sheets, consolidated cash flow statements and notes (pages 172 to 241), for the year ended December 31, 2015.

BOARD OF DIRECTORS' RESPONSIBILITY

The Board of Directors is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) and the requirements of Swiss law (SCO). This responsibility includes designing, implementing and maintaining an internal control system relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error. The Board of Directors is further responsible for selecting and applying appropriate accounting policies and making accounting estimates that are reasonable in the circumstances.

AUDITOR'S RESPONSIBILITY

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with Swiss law, Swiss Auditing Standards, International Standards on Auditing and the standards of the Public Company Accounting Oversight Board of the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers the internal control system relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of accounting estimates made, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

OPINION

In our opinion, the consolidated financial statements for the year ended December 31, 2015 present fairly, in all material respects, the financial position, the results of operations and the cash flows in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board and comply with Swiss law.

REPORT ON OTHER LEGAL REQUIREMENTS

We confirm that we meet the legal requirements on licensing according to the Auditor Oversight Act (AOA) and independence (article 728 SCO and article 11 AOA) and that there are no circumstances incompatible with our independence.

In accordance with article 728a paragraph 1 item 3 SCO and Swiss Auditing Standard 890, we confirm that an internal control system exists which has been designed for the preparation of consolidated financial statements according to the instructions of the Board of Directors.

We recommend that the consolidated financial statements submitted to you be approved.

REPORT ON THE EFFECTIVENESS OF INTERNAL CONTROL OVER FINANCIAL REPORTING

We have also audited the effectiveness of Novartis Group's internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

The Board of Directors and management of Novartis Group are responsible for maintaining effective internal control over financial reporting and management is responsible for the assessment of the effectiveness of internal control over financial reporting included in the accompanying *Report of Novartis Management on Internal Control Over Financial Reporting* in this financial report on page 242. Our responsibility is to express an opinion on the effectiveness of Novartis Group's internal control over financial reporting based on our integrated audit.

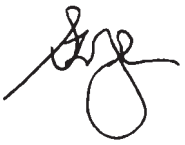
We conducted our audit of internal control over financial reporting in accordance with the standards of the Public Company Accounting Oversight Board of the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. 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, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 the applicable accounting standards. 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 the applicable accounting standards, 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.

In our opinion, Novartis Group maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the COSO.

PricewaterhouseCoopers AG



Bruno Rossi
Audit expert
Auditor in charge

Stephen Johnson
Global relationship partner

Basel, January 26, 2016

FINANCIAL STATEMENTS OF NOVARTIS AG

INCOME STATEMENTS

(For the years ended December 31, 2015 and 2014)

	Note	2015 CHF millions	2014 CHF millions
Income from investment in Group subsidiaries		6 168	6 869
License income		1 098	1 340
Gain from disposal of intangibles assets		558	272
Other income		8	4
Total income		7 832	8 485
Amortization of goodwill and other intangible assets	3	– 1 143	– 1 154
Administrative expenses		– 27	– 27
Other expenses		– 31	– 11
Total expenses		– 1 201	– 1 192
Operating income		**6 631**	**7 293**
Financial income		562	589
Financial expenses		– 253	– 287
Income before extraordinary income and taxes		**6 940**	**7 595**
Extraordinary income, net	4	1 422	32
Extraordinary expenses, net	4	– 56	
Income before taxes		**8 306**	**7 627**
Direct taxes		– 265	– 148
Net income of the year		**8 041**	**7 479**

The accompanying Notes form an integral part of these financial statements.

BALANCE SHEETS

(At December 31, 2015 and 2014)

	Note	2015 CHF millions	2014 CHF millions
ASSETS			
Current assets			
Cash and cash equivalents		103	51
Receivables			
Group subsidiaries		3 318	15 410
Third parties		159	44
Total current assets		**3 580**	**15 505**
Non-current assets			
Financial assets			
Group subsidiaries		15 884	5 571
Third parties			24
Investments	5		
Group subsidiaries		10 996	10 708
Third parties		0	0
Goodwill and other intangible assets	3	16 647	17 925
Total non-current assets		**43 527**	**34 228**
Total assets		**47 107**	**49 733**
LIABILITIES AND EQUITY			
Current liabilities			
Interest-bearing current liabilities			
Bonds	6		799
Other current liabilities			
Group subsidiaries		77	224
Third parties		118	73
Accrued expenses		378	199
Deferred income		55	60
Total current liabilities		**628**	**1 355**
Non-current liabilities			
Interest-bearing non-current liabilities			
Bonds	6	1 378	
Non-current provisions		505	499
Total non-current liabilities		**1 883**	**499**
Equity			
Share capital	7	**1 338**	**1 353**
Legal capital reserves – Capital contribution reserve		**198**	**198**
General reserve		320	320
Reserve for treasury shares held by subsidiaries	8	4 009	4 522
Total legal retained earnings		**4 329**	**4 842**
Free reserves	9	34 560	36 380
Retained earnings		806	
Net income of the year		8 041	7 479
Retained earnings available for distribution at the end of the year		8 847	7 479
Total unappropriated earnings		**43 407**	**43 859**
Treasury shares held by Novartis AG	8	**– 4 676**	**– 2 373**
Total equity		**44 596**	**47 879**
Total liabilities and equity		**47 107**	**49 733**

The accompanying Notes form an integral part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS OF NOVARTIS AG

1. Introduction

The financial statements of Novartis AG, with registered office in Basel, comply with the requirements of the new Swiss accounting legislation, which became effective since January 1, 2013 and required implementation in 2015, of the Swiss Code of Obligations (SCO). In accordance with the SCO, Novartis AG elected to restate the 2014 financial statements to be comparable with the 2015 presentation. This resulted in changes to the presentation of the income statement and balance sheet and the reclassification of treasury shares held by Novartis AG from marketable securities to equity. This reclassification reduced the 2014 previously reported total current assets, total assets, total equity and total equity and liabilities by CHF 2 373 million.

Novartis AG is presenting consolidated financial statements according to IFRS. As a result, these financial statements and notes do not include additional disclosures, cash flow statement and management report.

2. Accounting Policies

FINANCIAL INCOME AND EXPENSES

Current assets and current liabilities denominated in foreign currencies are converted at year-end exchange rates. Realized exchange gains and losses as well as all unrealized exchange losses arising from these as well as those from business transactions are recorded net as financial income or financial expenses.

DERIVATIVE FINANCIAL INSTRUMENTS

Derivative financial instruments are used for hedging purposes. These instruments are valued at fair value. When different accounting policies apply for the hedged item and the derivative financial instrument, hedge accounting is applied through measuring the hedged item together with the derivative financial instrument.

FINANCIAL ASSETS

Financial assets are valued at acquisition cost less adjustments for foreign currency losses and any other impairment of value.

INVESTMENTS

Investments are initially recognized at cost. Investments in Novartis Group subsidiaries are assessed annually and adjusted to their recoverable amount within their category.

GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill and other intangible assets are capitalized and amortized over a period of between five and twenty years. Goodwill and other intangible assets are reviewed for impairment on a yearly basis. If necessary an impairment loss is recognized.

BONDS

Bonds are valued on an amortized cost basis such that additional interest is accrued over the duration of the bonds so that at maturity the balance sheet amount will equal the amount that is due to be paid.

PROVISIONS

Provisions are made to cover general business risks of the Group.

3. Goodwill and Other Intangible Asset Movements

	2015 CHF millions	2014 CHF millions
Goodwill		
Gross cost [1]	**22 350**	**22 350**
Accumulated amortization		
January 1	**– 4 560**	**– 3 420**
Amortization charges	– 1 143	– 1 140
December 31	**– 5 703**	**– 4 560**
Net book value at December 31	**16 647**	**17 790**
Other intangible assets		
Cost		
January 1	**255**	**242**
Additions		13
Disposal as a result of the Novartis OTC divestment to GSK	– 244	
December 31	**11**	**255**
Accumulated amortization		
January 1	**– 120**	**– 106**
Amortization charges	– 3	– 14
Disposal as a result of the Novartis OTC divestment to GSK	112	
December 31	**– 11**	**– 120**
Net book value at December 31	**0**	**135**
Goodwill and other intangible assets		
Net book value at December 31	**16 647**	**17 925**

[1] There was no change to cost value of Goodwill during 2015 and 2014

4. Extraordinary Income and Expenses, Net

Novartis AG realized a net divestment gain of CHF 1 422 million due to the Novartis Animal Health divestment to Eli Lilly and Company, USA in 2015. In 2015, an extraordinary expense related to prior year direct taxes of CHF 56 million (2014: extraordinary income of CHF 32 million) was recorded.

5. Investments

The principal direct and indirect subsidiaries and other holdings of Novartis AG are shown in Note 32 to the Group's consolidated financial statements. A reclassification of CHF 3 725 million has been made within non-current assets from investments in Group subsidiaries to financial assets Group subsidiaries in 2014 to be comparable with the 2015 presentation.

6. Bonds

Straight bonds	2015 CHF millions	2014 CHF millions
3.625% CHF 800 million bond 2008/2015 of Novartis AG, Basel, Switzerland, issued at 100.35%		799
0.250% CHF 500 million bond 2015/2025 of Novartis AG, Basel, Switzerland, issued at 100.64%	502	
0.625% CHF 550 million bond 2015/2029 of Novartis AG, Basel, Switzerland, issued at 100.502%	551	
1.050% CHF 325 million bond 2015/2035 of Novartis AG, Basel, Switzerland, issued at 100.479%	325	
Total straight bonds	**1 378**	**799**

Breakdown by maturity	2015 CHF millions	2014 CHF millions
2015		799
After 2015	1 378	
Total	**1 378**	**799**

Fair value comparison	2015 Balance sheet CHF millions	2015 Fair values CHF millions	2014 Balance sheet CHF millions	2014 Fair values CHF millions
Straight bonds	1 378	1 356	799	813
Total	**1 378**	**1 356**	**799**	**813**

On June 26, 2008, Novartis AG issued a CHF 800 million bond bearing interest at 3.625% per annum. The bond was repaid on June 26, 2015. On February 13, 2015, Novartis AG issued three new bonds of CHF 500 million (bearing interest at 0.25% per annum), CHF 550 million (bearing interest at 0.625% per annum) and CHF 325 million (bearing interest at 1.050% per annum). The bonds are valued on an amortized cost basis.

7. Share Capital

	2015		2014	
	Number of shares	Share capital CHF millions	Number of shares	Share capital CHF millions
January 1	**2 706 193 000**	**1 353**	**2 706 193 000**	**1 353**
Number of shares canceled/capital reduced during the period	– 29 200 000	– 15		
December 31	**2 676 993 000**	**1 338**	**2 706 193 000**	**1 353**

The Novartis AG share capital consists of registered shares with a nominal value of CHF 0.50 each.

The total share capital decreased from CHF 1 353.1 million at December 31, 2014 to CHF 1 338.5 million at December 31, 2015 due to a share capital reduction as a result of the cancellation of 29.2 million repurchased shares with a nominal value of CHF 14.6 million. The cancellation was approved at the Annual General Meeting of February 27, 2015 and became effective on May 6, 2015. During 2014, the total share capital of Novartis AG was unchanged.

In 2014, Novartis has entered into an irrevocable, non-discretionary arrangement with a bank to repurchase own shares on the second trading line under its USD 5 billion share buyback as well as to mitigate dilution from employee participation programs. The commitment under this arrangement amounted to CHF 652 million as of December 31, 2014, reflecting the expected purchases by the bank under such trading plan over a rolling 90 days period. This trading plan was fully executed and has expired. As a result, there is no contingent liability related to this plan as of December 31, 2015.

8. Reserve for Treasury Shares

	2015		2014	
	Number of shares	Reserve for treasury shares held by subsidiaries CHF millions	Number of shares	Reserve for treasury shares held by subsidiaries CHF millions
Treasury shares held by subsidiaries [1]				
January 1	**73 564 212**	**4 522**	**77 844 615**	**4 590**
Number of shares purchased/sold; reserves transferred	– 8 387 829	– 513	– 4 280 403	– 68
December 31	**65 176 383**	**4 009**	**73 564 212**	**4 522**

[1] excluding foundations

	2015		2014	
	Number of shares	Reserve for treasury shares held by Novartis AG CHF millions	Number of shares	Reserve for treasury shares held by Novartis AG CHF millions
Treasury shares held by Novartis AG				
January 1	**80 507 458**	**2 373**	**53 467 458**	**178**
Number of shares purchased/canceled; reserves transferred	20 678 180	2 303	27 040 000	2 195
December 31	**101 185 638**	**4 676**	**80 507 458**	**2 373**

	2015		2014	
	Number of shares	Total reserve for treasury shares CHF millions	Number of shares	Total reserve for treasury shares CHF millions
Total treasury shares [1]				
January 1	**154 071 670**	**6 895**	**131 312 073**	**4 768**
Total number of shares purchased/sold or canceled; reserves transferred	12 290 351	1 790	22 759 597	2 127
December 31	**166 362 021**	**8 685**	**154 071 670**	**6 895**

[1] excluding foundations

Novartis AG has met the legal requirements for legal reserves under Articles 659 et. seq. and 663b.10 SCO for the treasury shares.

Treasury share purchases during 2015 totaled 63.6 million (2014: 41.8 million) with an average purchase price of CHF 93 (2014: CHF 81), treasury share sales totaled 27.0 million (2014: 8.2 million) with an average sale price of CHF 56 (2014: CHF 57) and share-based compensation transactions totaled 11.3 million shares (2014: 10.8 million shares).

The number of treasury shares held by the Company and its subsidiaries meet the definitions and requirements of Article 659b SCO. At December 31, 2015, treasury shares held by Novartis AG and its subsidiaries totaled 166 362 021. As per the dividend payment date, Novartis AG and its subsidiaries are expected to hold 156 147 021 shares. These shares are non-dividend bearing shares. It should be noted that within the Novartis Group's IFRS consolidated financial statements some entities are included in the consolidation scope, mainly foundations, which do not qualify as subsidiaries in the sense of Article 659b SCO.

9. Free Reserves

	2015 CHF millions	2014 CHF millions
January 1	**36 380**	**37 028**
Reduction due to cancellation of treasury shares (CHF 2 348 million of repurchased shares less their nominal value of CHF 15 million)	– 2 333	
Transfer from reserve for treasury shares	513	68
Use of free reserves for divided payment		– 716
December 31	**34 560**	**36 380**

10. Contingent Liabilities

	Dec 31, 2015 CHF millions	Dec 31, 2014 CHF millions
Guarantees in favor of subsidiaries to cover capital and interest of bonds, credit facilities and commercial paper programs – total maximum amount CHF 38 445 million (2014: CHF 30 420 million)	16 850	15 765
Other guarantees in favor of subsidiaries, associated companies and others – total maximum amount CHF 2 707 million (2014: CHF 2 551 million)	1 672	1 389
Total contingent liabilities	**18 522**	**17 154**

Novartis AG is part of the Swiss Novartis value added tax (VAT) group and is therefore jointly liable for existing and future VAT claims from the Swiss Federal Tax Administration.

11. Registration, Voting Restrictions and Major Shareholders

The Company's Articles of Incorporation state that no person or entity shall be registered with the right to vote for more than 2% of the share capital as set forth in the Commercial Register. In particular cases the Board of Directors may allow exemptions from the limitation for registration in the share register.

According to the share register, shareholders owning 2% or more of the Company's capital at December 31, excluding treasury shares held by Novartis AG and other Novartis subsidiaries, are as follows:

	% holding of share capital December 31, 2015	% holding of share capital December 31, 2014
Novartis Foundation for Employee Participation, Basel, Switzerland	2.6	3.2
Emasan AG, Basel, Switzerland	3.3	3.3

Furthermore, there are the following other significant shareholders:

Shareholders registered as nominees:
- Chase Nominees Ltd., London[1], holds 8.8% (2014: 9.1%).
- Nortrust Nominees, London, holds 3.2% (2014: 3.2%).
- The Bank of New York Mellon, New York, holds 4.6% (2014: 4.6%) through its Nominees Mellon Bank, Everett, with a holding of 1.7% (2014: 2.6%) and The Bank of New York Mellon, Brussels, with a holding of 2.9% (2014: 2.0%).

Shareholder acting as American Depositary Share (ADS) depositary:
- JPMorgan Chase Bank, New York, holds 11.2% (2014: 11.4%).

Shareholders disclosed through notifications filed with Novartis AG and the SIX Swiss Exchange:
- Capital Group Companies, Inc., Los Angeles, holds between 3% and 5%.
- BlackRock, Inc., New York, holds between 3% and 5%.

[1] Previously reported as JPMorgan Chase Bank, New York, but changed to its affiliate Chase Nominees Ltd, London, which is entered as nominee in the Novartis Share Register.

12. Equity Instrument Disclosures of Board of Directors and Executive Committee members

SHARE OWNERSHIP REQUIREMENTS FOR BOARD MEMBERS

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 of Directors. As of December 31, 2015, 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 BOARD MEMBERS

The total number of vested Novartis shares and ADRs owned by members of the Board of Directors and "persons closely linked" [1] to them as of December 31, 2015 is shown in the table below.

As of December 31, 2015, no members of the Board of Directors together with "persons closely linked"[1] to them owned 1% or more of the outstanding shares (or ADRs) of Novartis. As of the same date, no members of the Board of Directors held any share options.

SHARES AND ADRS OWNED BY BOARD MEMBERS [1]

	Number of shares [2]	
	At December 31, 2015	At December 31, 2014
Joerg Reinhardt	480 404	466 951
Ulrich Lehner (until February 26, 2015)	NA	36 405
Enrico Vanni	15 566	13 805
Nancy Andrews (from February 27, 2015)	609	NA
Dimitri Azar	9 292	7 258
Verena A. Briner	6 429	4 845
Srikant Datar	32 629	30 792
Ann Fudge	15 605	14 112
Pierre Landolt [3]	54 866	52 290
Charles L. Sawyers	4 252	2 933
Andreas von Planta	124 868	122 709
William T. Winters	5 998	3 590
Total [4]	**750 518**	**755 690**

NA – Not applicable.

[1] Includes holdings of "persons closely linked" to Board members (see definition in this Note 12)

[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] Ulrich Lehner stepped down from the Board of Directors on February 26, 2015. At February 26, 2015, Ulrich Lehner owned 37 263 shares.

SHARE OWNERSHIP REQUIREMENTS FOR EXECUTIVE COMMITTEE MEMBERS

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.

CEO	5 x base compensation
Executive Committee members	3 x 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 granted under the Leveraged Share Savings Plan (LSSP) and the Employee Share Ownership Plan (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, 2015, all members who have served at least three years on the Executive Committee have met or exceeded their personal Novartis share ownership requirements.

As of January 1, 2016, to better align with prevalent market practice and the change to our compensation system, Executive Committee members will be required to meet their share ownership requirement within five years of hire/promotion.

SHARES, ADRS, EQUITY RIGHTS AND SHARE OPTIONS OWNED BY EXECUTIVE COMMITTEE MEMBERS

The following tables show the total number of shares, ADRs, other equity rights and share options owned by Executive Committee members and "persons closely linked" [1] to them as of December 31, 2015.

As of December 31, 2015, no Executive Committee members 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.

[1] "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.

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, 2015	Vested shares and ADRs	Unvested shares and other equity rights[2]	Total at December 31, 2014
Joseph Jimenez	284 405	322 200	606 605	256 685	399 811	656 496
Steven Baert	1 700	44 977	46 677	0	41 476	41 476
Felix R. Ehrat	92 435	107 870	200 305	48 398	95 424	143 822
David Epstein	70 371	230 535[3]	300 906	72 222	267 940[3]	340 162
Mark C. Fishman	52 242	276 622[3]	328 864	45 054	342 493[3]	387 547
Richard Francis	14 357	37 722	52 079	0	46 282	46 282
Jeff George	119 247	99 373	218 620	69 457	128 420	197 877
Harry Kirsch	46 579	100 359	146 938	31 860	90 650	122 510
Brian McNamara (until March 1, 2015)	NA	NA	NA	19 216	62 511	81 727
Andrin Oswald (until March 1, 2015)	NA	NA	NA	86 305	115 863	202 168
André Wyss	44 660	79 917	124 577	25 940	68 598	94 538
Total[4]	**725 996**	**1 299 575**	**2 025 571**	**655 137**	**1 659 468**	**2 314 605**

NA – Not applicable.
[1] Includes holdings of "persons closely linked" to Executive Committee members (see definition in this Note 12)
[2] Includes restricted shares, RSUs and target number of PSUs. Matching shares under the ESOP, 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] As a result of the GlaxoSmithKline transaction, Brian McNamara and Andrin Oswald stepped down from the Executive Committee on March 1, 2015. Brian McNamara owned 52 251 vested shares and 15 200 unvested shares and other equity rights at March 1, 2015. Andrin Oswald owned 122 892 vested shares and 41 547 unvested shares and other equity rights at March 1, 2015.

SHARE OPTIONS OWNED BY EXECUTIVE COMMITTEE MEMBERS[1]

	Number of share options[2]							
	2013	2012	2011	2010	2009	Other	Total at December 31, 2015	Total at December 31, 2014
Joseph Jimenez	0	0	0	0	0	0	0	157 266
Steven Baert	0	0	0	0	0	0	0	0
Felix R. Ehrat	0	0	0	0	0	0	0	0
David Epstein	0	0	0	0	0	0	0	0
Mark C. Fishman	0	0	0	0	0	0	0	0
Richard Francis	0	0	0	0	0	0	0	0
Jeff George	0	0	141 396	0	0	0	141 396	141 396
Harry Kirsch	0	0	0	0	0	0	0	0
Brian McNamara (until March 1, 2015)	NA	NA	NA	NA	NA	NA	NA	50 764
Andrin Oswald (until March 1, 2015)	NA	NA	NA	NA	NA	NA	NA	0
André Wyss	0	0	0	0	0	378 390	378 390	658 313
Total[3]	**0**	**0**	**141 396**	**0**	**0**	**378 390**	**519 786**	**1 007 739**

NA – Not applicable.
[1] The last share option grants under the Novartis Equity Plan Select were made 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, and to share options bought on the market by the Executive Committee members or "persons closely linked" to them (see definition in this Note 12).
[3] As a result of the GlaxoSmithKline transaction, Brian McNamara and Andrin Oswald stepped down from the Executive Committee on March 1, 2015. At March 1, 2015, Brian McNamara and Andrin Oswald did not own any share options.

APPROPRIATION OF AVAILABLE EARNINGS OF NOVARTIS AG AS PER BALANCE SHEET AND DECLARATION OF DIVIDEND

	2015 CHF	2014 CHF
Available unappropriated earnings		
Balance brought forward	805 551 128	
Net income of the year	8 040 648 710	7 478 506 586
Total available earnings at the disposal of the Annual General Meeting	**8 846 199 838**	**7 478 506 586**
Appropriation proposed by the Board of Directors		
Payment of a gross dividend (before taxes and duties) of CHF 2.70 (2014: CHF 2.60) on 2 520 845 979 (2014: 2 566 521 330) dividend bearing shares[1] with a nominal value of CHF 0.50 each	– 6 806 284 143	– 6 672 955 458
Balance to be carried forward	**2 039 915 695**	**805 551 128**

[1] No dividend will be declared on treasury shares held by Novartis AG, and certain treasury shares held by other Group companies.

Assuming that this proposal by the Board of Directors is approved by the Annual General Meeting of shareholders, payment of the dividend will be made as from February 29, 2016. The last trading day with entitlement to receive the dividend is February 24, 2016. As from February 25, 2016 the shares will be traded ex-dividend.

Report of the Statutory Auditor on the Financial Statements of Novartis AG

TO THE GENERAL MEETING OF NOVARTIS AG, BASEL

REPORT OF THE STATUTORY AUDITOR ON THE FINANCIAL STATEMENTS

As statutory auditor, we have audited the financial statements of Novartis AG, which comprise the income statements, balance sheets and notes (pages 245 to 253), for the year ended December 31, 2015.

BOARD OF DIRECTORS' RESPONSIBILITY

The Board of Directors is responsible for the preparation of the financial statements in accordance with the requirements of Swiss law (SCO) and the Company's articles of incorporation. This responsibility includes designing, implementing and maintaining an internal control system relevant to the preparation of financial statements that are free from material misstatement, whether due to fraud or error. The Board of Directors is further responsible for selecting and applying appropriate accounting policies and making accounting estimates that are reasonable in the circumstances.

AUDITOR'S RESPONSIBILITY

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Swiss law and Swiss Auditing Standards. Those standards require that we plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers the internal control system relevant to the entity's preparation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control system. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of accounting estimates made, as well as evaluating the overall presentation of the financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

OPINION

In our opinion, the financial statements for the year ended December 31, 2015 comply with Swiss law and the Company's articles of incorporation.

REPORT ON OTHER LEGAL REQUIREMENTS

We confirm that we meet the legal requirements on licensing according to the Auditor Oversight Act (AOA) and independence (article 728 SCO and article 11 AOA) and that there are no circumstances incompatible with our independence.

In accordance with article 728a paragraph 1 item 3 SCO and Swiss Auditing Standard 890, we confirm that an internal control system exists which has been designed for the preparation of financial statements according to the instructions of the Board of Directors.

We further confirm that the proposed appropriation of available earnings complies with Swiss law and the Company's articles of incorporation. We recommend that the financial statements submitted to you be approved.

PricewaterhouseCoopers AG

Bruno Rossi
Audit expert
Auditor in charge

Stephen Johnson
Global relationship partner

Basel, January 26, 2016

Alcon, the eye care division of Novartis, has a long-standing partnership with Surgical Eye Expeditions (SEE) International and is one of the primary contributors of medication and other supplies

→ CONTINUED FROM PAGE 139

After such an exhausting schedule, anyone would deserve a break – but many of their vacations are also spent performing eye surgery in countries as far afield as Syria, Mongolia, Vietnam and Peru. It makes for a family holiday with a difference, as their daughters, ages 12 and 16, sometimes join them and help by preparing patients for surgery, fetching supplies for the operating theater and cleaning instruments.

Their extraordinary work is facilitated by SEE International, a not-for-profit organization that provides eye surgery in developing countries through a network of 650 medical professionals known as "SEE Docs."

The acronym stands for Surgical Eye Expeditions, and in the 40 years of its existence, these volunteers have examined around 3.6 million patients and performed more than 440 000 sight-restoring operations in 80 countries. Alcon, the eye care division of Novartis, has a long-standing partnership with SEE International and is one of the primary contributors of medication and other supplies.

Janak Shah is the most prolific of all the SEE Docs, having conducted more than 130 clinics in India and abroad. Preeti joins him whenever possible and they operate side-by-side, sometimes by the light of headlamps in areas where electricity supplies are unreliable.

A typical clinic takes place at a rural hospital where eye surgery is either unavailable or too expensive for ordinary people. Hundreds of candidates are screened beforehand and the Shahs each operate on as many as 30 patients during a weekend visit.

Even simple surgery, such as the removal of cataracts, can make a tremendous difference to patients by giving them the chance of leading a normal working and family life. Treating children is especially rewarding, as they will benefit for decades.

"The patients are overwhelmed because they can't see anything and then suddenly they can see the world," says Janak. "There's no greater bliss than coming out of the darkness and into the light."


1


2

1 Bhanti Shankar Kali, 5, was born with congenital cataracts. Her parents brought her to the eye hospital to have them removed.
2 Drs. Janak and Preeti Shah assess a patient receiving eye surgery at one of their weekend clinics in Darjeeling.
3 Dr. Shah evaluates a patient.
4 The Shahs and their team work together on a young patient whose life could be transformed by the treatment they provide.

3

4

OTHER INFORMATION

Each year, Novartis commissions a photographer to portray a unique, personal and artistic perspective of healthcare around the world. Depicting the diversity of patients, medical professionals, researchers and caregivers, the photographs demonstrate the complex realities of global healthcare. We are grateful to Brent Stirton and to those who shared their experiences for the Annual Report 2015.

BRENT STIRTON

Brent Stirton is a South African industry-leading documentary photographer working with Getty Images Reportage agency. His work has been published by National Geographic magazine, Human Rights Watch, TIME, Newsweek, The New York Times Magazine, The Sunday Times Magazine, GEO, CNN and many other leading titles. Mr. Stirton has photographed extensive essays on HIV/AIDS issues across multiple countries in an ongoing long-term project. He currently spends most of his time working on long-term investigative projects for National Geographic magazine and global NGOs, remaining committed to issues relating to health, diminishing cultures, sustainability and the environment.

Mr. Stirton has worked for the Ford, Clinton and Gates foundations, the Nike Foundation and the World Economic Forum – for which he was elected a Young Global Leader in 2008. He is also a Canon Ambassador, one of 12 photographers representing Canon photography.

Mr. Stirton has received seven World Press Photo awards, seven awards from Pictures of the Year International, six Lucie Awards, and others from the Overseas Press Club, the Frontline Club, the Deadline Club, DAYS JAPAN, China International Photo Awards, the Leads Awards Germany, Graphis, the London Association of Photographers, Communication Arts, American Photography, American Photo, and the American Society of Publication Designers. Additionally, he received two awards from the United Nations for work on the environment and HIV/AIDS, and won the Visa D'Or at Visa Pour L'Image. He also won the National Magazine Award for his work in the Democratic Republic of Congo.

We would like to acknowledge the assistance of Mr. Stirton's colleague at Getty Images, Tom Stoddart, who kindly replaced him on short notice to photograph home healthcare workers in Switzerland.

Two ethnic H'mong women pose for pictures after a day of work in the rice paddies below. The terraced rice fields are part of the breathtaking scenery of Mù Cang Chai in northeast Vietnam and attract tourists from around the world.

Key dates for 2016

ANTICIPATED REPORTING DATES

Annual General Meeting **February 23, 2016**
First quarter 2016 results **April 21, 2016**
Novartis investor event in Switzerland **May 24-25, 2016**
Second quarter and first half 2016 results **July 19, 2016**
Third quarter and first nine months 2016 results **October 25, 2016**

Contact information

For further information regarding Novartis, please contact Novartis International AG CH-4002 Basel, Switzerland

GENERAL INFORMATION

Tel: +41 61 324 11 11
Fax: +41 61 324 80 01

INVESTOR RELATIONS

Tel: +41 61 324 79 44
Fax: +41 61 324 84 44
Email: investor.relations@novartis.com

SHARE REGISTRY

Tel: +41 61 324 72 04
Fax: +41 61 324 32 44
Email: share.registry@novartis.com

MEDIA RELATIONS

Tel: +41 61 324 22 00
Fax: +41 61 324 90 90
Email: media.relations@novartis.com

FURTHER DETAIL

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Forward-looking statements

These materials contain forward-looking statements that can be identified by terminology such as such as "potential," "expected," "will," "planned," or similar expressions, 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 any potential financial or other impact on Novartis or any of our divisions of the strategic actions announced in January 2016 to focus our divisions, integrate certain functions and leverage our scale; or regarding any potential financial or other impact on Novartis as a result of the creation and operation of NBS; or regarding the potential financial or other impact on Novartis of the transactions with GSK, Lilly or CSL; 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 Novartis will be able to realize any of the potential strategic benefits, synergies or opportunities as a result of the strategic actions announced in January 2016, the creation and operation of NBS, or the transactions with GSK, Lilly and 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. Neither can there be any guarantee that shareholders will achieve any particular level of shareholder returns. Nor 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; the potential that the strategic benefits, synergies or opportunities expected from the strategic actions announced in January 2016, the creation and operation of NBS, or the transactions with GSK, Lilly and CSL 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 safety, quality or manufacturing issues; global trends toward health care cost containment, including ongoing pricing pressures, in particular from increased publicity on pharmaceuticals pricing; 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 the continued significant increase in value of the US dollar, our reporting currency, against a number of currencies; uncertainties regarding future demand for our products; uncertainties involved in the development of new healthcare products; uncertainties regarding potential significant breaches of data security or disruptions of our information technology systems; and other risks and factors referred to in Novartis AG's current Form 20-F on file with the US Securities and Exchange Commission. Novartis is providing the information in these materials as of this date and does not undertake any obligation to update any forward-looking statements as a result of new information, future events or otherwise.

The business policy of Novartis takes into account the OECD's Guidelines for Multinational Enterprises, with their recommendations on the disclosure of information.

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Photo on the right
An Indian child wears glasses to protect her eyes following surgery. The operation was supported by the charity SEE International, which provides sight-saving treatment to people in remote regions of the world, and which receives support from the Alcon Division of Novartis.
Back cover
A scientist wears protective clothing as part of a strict anti-contamination protocol at a Novartis cell processing facility in the US state of New Jersey.


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