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US SECURITIES & EXCHANGE COMMISSION FORM 20-F 2013

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington D.C. 20549

FORM 20-F

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

OR

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 for the fiscal year ended December 31, 2013

OR

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

OR

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

Commission file number 1-15024

NOVARTIS AG

(Exact name of Registrant as specified in its charter)

NOVARTIS Inc.

(Translation of Registrant's name into English)

Switzerland

(Jurisdiction of incorporation or organization)

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

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

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

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

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

None

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

None

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

2,426,084,308 shares

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

Yes ☒ **No** ☐

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

Yes ☐ **No** ☒

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

Yes ☒ **No** ☐

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

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

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

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

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

Item 17 ☐ **Item 18** ☐

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

Yes ☐ **No** ☒

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

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INTRODUCTION AND USE OF CERTAIN TERMS

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

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

In this Form 20-F, references to "US dollars" or "$" are to the lawful currency of the United States of America, and references to "CHF" are to Swiss francs; references to the "United States" or to "US" are to the United States of America, references to the "European Union" or to "EU" are to the European Union and its 28 member states, and references to "Americas" are to North, Central (including the Caribbean) and South America, unless the context otherwise requires; references to "associates" are to employees of our affiliates; references to the "FDA" are to the US Food and Drug Administration, references to "EMA" are to the European Medicines Agency, an agency of the EU, and references to the "CHMP" are to the EMA's Committee for Medicinal Products for Human Use; references to "ADR" or "ADRs" are to Novartis American Depositary Receipts, and references to "ADS" or "ADSs" are to Novartis American Depositary Shares; references to the "NYSE" are to the New York Stock Exchange, and references to the "SIX" are to the SIX Swiss Exchange.

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

FORWARD-LOOKING STATEMENTS

This Form 20-F contains certain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Other written materials filed with or furnished to the US Securities and Exchange Commission (SEC) by Novartis, as well as other written and oral statements made to the public, may also contain forward-looking statements. Forward-looking statements can be identified by words such as "potential," "expected," "will," "planned," "pipeline," "outlook," or similar terms, or by express or implied discussions regarding potential new products, potential new indications for existing products, or regarding potential future revenues from any such products; potential shareholder returns or credit ratings, the potential outcome of the share buyback being initiated; 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 shareholders will achieve any particular level of shareholder returns or

regarding the potential outcome of the share buyback being initiated. Neither can there be any guarantee that the Group, or any of its divisions, will be commercially successful in the future, or achieve any particular credit rating.

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

- unexpected regulatory actions or delays or government regulation generally;
- the potential that the strategic benefits, synergies or opportunities expected from the divestment of our former blood transfusion diagnostics unit 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;
- Novartis' ability to obtain or maintain proprietary intellectual property protection, including the ultimate extent of the impact on Novartis of the loss of patent protection and exclusivity on key products which commenced in prior years and will continue this year;
- unexpected manufacturing and quality issues, including the final resolution of the Warning Letters previously issued to us with respect to Sandoz and Consumer Health manufacturing facilities;
- global trends toward health care cost containment, including ongoing pricing pressures;
- uncertainties regarding actual or potential legal proceedings, including, among others, actual or potential product liability litigation, litigation and investigations regarding sales and marketing practices, government investigations and intellectual property disputes;
- general economic and industry conditions;
- uncertainties regarding the effects of the persistently weak global economic and financial environment, including the financial troubles in certain Eurozone countries;
- uncertainties regarding future global exchange rates; uncertainties regarding future demand for our products.

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

PART I

Item 1. Identity of Directors, Senior Management and Advisers

Not applicable.

Item 2. Offer Statistics and Expected Timetable

Not applicable.

Item 3. Key Information

3.A Selected Financial Data

The selected financial information set out below has been extracted from our consolidated financial statements prepared in accordance with IFRS as issued by the IASB. Our consolidated financial statements for the years ended December 31, 2013, 2012 and 2011 are included in "Item 18. Financial Statements" in this Form 20-F.

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

	Year Ended December 31,				
	2013	**Restated 2012[3]**	**Restated 2011[3]**	**2010**	**2009**
	($ millions, except per share information)				
INCOME STATEMENT DATA					
Net sales	**57,920**	**56,673**	**58,566**	**50,624**	**44,267**
Operating income	**10,910**	**11,193**	**10,780**	**11,526**	**9,982**
Income from associated companies	600	552	528	804	293
Interest expense	(683)	(724)	(751)	(692)	(551)
Other financial (expense) and income	(92)	(96)	(2)	64	198
Income before taxes	**10,735**	**10,925**	**10,555**	**11,702**	**9,922**
Taxes	(1,443)	(1,542)	(1,483)	(1,733)	(1,468)
Net income	**9,292**	**9,383**	**9,072**	**9,969**	**8,454**
Attributable to:					
Shareholders of Novartis AG	9,175	9,270	8,940	9,794	8,400
Non-controlling interests	117	113	132	175	54
Basic earnings per share ($)	3.76	3.83	3.75	4.28	3.70
Diluted earnings per share ($)	3.70	3.79	3.70	4.26	3.69
Cash dividends[1]	6,100	6,030	5,368	4,486	3,941
Cash dividends per share in CHF[2]	2.45	2.30	2.25	2.20	2.10

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

(2) Cash dividends per share represent dividends proposed that relate to earnings of the current year. Dividends for 2013 will be proposed to the Annual General Meeting on February 25, 2014 for approval.

(3) 2012 and 2011 restated to reflect the adoption of revised IAS19 on *Employee Benefits* (for additional information, see "Item 18, Financial Statements—Note 30").

	Year Ended December 31,				
	2013[1]	Restated 2012[2]	Restated 2011[2]	Restated 2010[2]	2009
			($ millions)		
BALANCE SHEET DATA					
Cash, cash equivalents and marketable securities & derivative financial instruments	9,222	8,119	5,075	8,134	17,449
Inventories	7,267	6,744	5,930	6,093	5,830
Other current assets	14,053	13,141	13,079	12,458	10,412
Non-current assets	95,712	96,187	93,384	96,620	61,814
Total assets	**126,254**	**124,191**	**117,468**	**123,305**	**95,505**
Trade accounts payable	6,148	5,593	4,989	4,788	4,012
Other current liabilities	20,220	18,458	18,159	19,870	15,458
Non-current liabilities	25,414	30,877	28,331	28,856	18,573
Total liabilities	**51,782**	**54,928**	**51,479**	**53,514**	**38,043**
Issued share capital and reserves attributable to shareholders of Novartis AG	74,343	69,137	65,893	63,218	57,387
Non-controlling interests	129	126	96	6,573	75
Total equity	**74,472**	**69,263**	**65,989**	**69,791**	**57,462**
Total liabilities and equity	**126,254**	**124,191**	**117,468**	**123,305**	**95,505**
Net assets	74,472	69,263	65,989	69,791	57,462
Outstanding share capital	912	909	895	832	825
Total outstanding shares (millions)	2,426	2,421	2,407	2,289	2,274

(1) Assets and liabilities of the disposal group are included in the lines "Other current assets" and "Other current liabilities" respectively (for additional information, see "Item 18, Financial Statements—Note 2").

(2) 2012, 2011 and 2010 restated to reflect the adoption of revised IAS19 on *Employee Benefits* (for additional information, see "Item 18, Financial Statements—Note 30").

Cash Dividends per Share

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

Year Earned	Month and Year Paid	Total Dividend per share (CHF)	Total Dividend per share ($)
2009	March 2010	2.10	1.95
2010	March 2011	2.20	2.37
2011	March 2012	2.25	2.48
2012	March 2013	2.30	2.44
2013[1]	March 2014	2.45	2.75[2]

(1) Dividend to be proposed at the Annual General Meeting on February 25, 2014 and to be distributed March 4, 2014

(2) Translated into US dollars at the 2013 Bloomberg Market System December 31, 2013 rate of $1.124 to the Swiss franc. This translation is an example only, and should not be construed as a representation that the Swiss franc amount represents, or has been or could be converted into US dollars at that or any other rate.

Exchange Rates

The following table shows, for the years and dates indicated, certain information concerning the rate of exchange of US dollar per Swiss franc based on exchange rate information found on Bloomberg Market System. The exchange rate in effect on January 22, 2014, as found on Bloomberg Market System, was CHF 1.00 = $1.10.

Year ended December 31, ($ per CHF)	Period End	Average[1]	Low	High
2009	0.97	0.92	0.84	1.00
2010	1.06	0.96	0.86	1.07
2011	1.06	1.13	1.06	1.25
2012	1.09	1.07	1.02	1.12
2013	1.12	1.08	1.05	1.12
Month				
August 2013			1.07	1.09
September 2013			1.06	1.10
October 2013			1.09	1.12
November 2013			1.08	1.10
December 2013			1.10	1.13
January 2014 (through January 22, 2014)			1.10	1.12

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

3.B Capitalization and Indebtedness

Not applicable.

3.C Reasons for the offer and use of proceeds

Not applicable.

3.D Risk Factors

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

Risks Facing Our Business

Our products face important patent expirations and significant competition.

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

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

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

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

- The patent on valsartan, the active ingredient of *Diovan*/*Co-Diovan*/*Diovan HCT* (high blood pressure), which was long our best-selling product, expired in the major countries of the EU in November 2011, and generic competitors have launched there. In addition, patent protection expired in the US in September 2012, and generic versions of *Diovan HCT* have launched in the US. Generic versions of *Diovan* monotherapy have not yet launched in the US but could potentially launch at any time. In addition, patent protection for *Diovan* expired in Japan in 2013, and will expire in 2016 for *Co-Diovan* (including patent term extensions). The active ingredient valsartan is also used in the single-pill combination therapies *Exforge* and *Exforge HCT* (high blood pressure). While market exclusivities for *Exforge*/*Exforge HCT* will remain in the EU and Japan due to regulatory exclusivities and to a valsartan patent extension for *Exforge* in Japan until 2015, there is a risk that generic manufacturers may circumvent regulatory exclusivity and gain approval of a combination valsartan-amlodipine product in Europe. In the US, under a license agreement with a generics manufacturer, *Exforge* is expected to face generic competition beginning in October 2014.
- The patent on zoledronic acid, the active ingredient in *Zometa* (cancer), as well as in *Reclast*/*Aclasta* (osteoporosis), expired in 2013 in the US and in other major markets, and generic versions of these products have launched.
- Patent protection for octreotide acetate, the active ingredient of *Sandostatin,* has expired. Generic versions of *Sandostatin SC* are available in the US and elsewhere. Patents protecting the *Sandostatin LAR* formulation, the long-acting version of *Sandostatin* which represents a majority of our *Sandostatin* sales, expired in 2010 in key markets outside the US, and will expire in 2014 and beyond in the US.
- Patent protection on rivastigmine, the active ingredient in *Exelon*, expired in 2011 and 2012 and *Exelon* capsules are subject to generic competition, including in the US and all of Europe. We hold certain formulation patents with respect to *Exelon* Patch, which makes up a substantial portion of our *Exelon* sales. These patents have been challenged. Generic patches were launched in Germany and certain other EU countries in 2013.
- The patent on the active ingredient in *Gleevec*/*Glivec* (cancer) will expire in 2015 in the US, in 2016 in the major EU countries and in September 2014 for the main indications in Japan. However, the product is protected by additional patents claiming innovative features of *Gleevec*/*Glivec*. Generic versions of *Gleevec*/*Glivec* have already been launched in Turkey, Brazil, Canada, China, India, Russia and for a minor indication in Japan.

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

In 2014, the impact of generic competition on our net sales is expected to be as much as $3.0 billion. Because we typically have substantially reduced marketing and research and development expenses related to a product in its final year of exclusivity, it is expected that the loss of patent protection will have an impact on our operating income which can be expected to correspond to a significant portion of the product's lost sales. The magnitude of such an impact could depend on a number of factors, including: the time of year at which such exclusivity would be lost; the ease or difficulty of manufacturing a competitor product and obtaining regulatory approval to market it; the number of generic competitor products approved, and whether, in the US, a single competitor is granted an exclusive marketing period; and the geographies in which generic competitor products are approved, including the strength of the market for generic pharmaceutical products in such geographies and the comparative profitability of branded pharmaceutical products in such geographies.

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

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

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

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

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

Using the products of our Pharmaceuticals Division as an example, the research and development process for a new product can take up to 15 years, or even longer, from discovery to commercial product launch—and with a limited available patent life, the longer it takes to develop a product, the less time there will be for us to recoup our development costs. New products need not only undergo intensive preclinical and clinical testing, but also must be approved by means of highly complex, lengthy and

expensive approval processes which can vary from country to country. During each stage, there is a substantial risk that we will encounter serious obstacles which will further delay us and add substantial expense, that we will only develop a product with limited potential for commercial success, or that we will be forced to abandon a product in which we have invested substantial amounts of time and money. These risks may include: failure of the product candidate in preclinical studies; difficulty enrolling patients in clinical trials or delays or clinical trial holds at clinical trial sites; delays in completing formulation and other testing and work necessary to support an application for regulatory approval; adverse reactions to the product candidate or indications or other safety concerns; insufficient clinical trial data to support the safety or efficacy of the product candidate; an inability to manufacture sufficient quantities of the product candidate for development or commercialization activities in a timely and cost-effective manner; and failure to obtain, or delays in obtaining, the required regulatory approvals for the product candidate or the facilities in which it is manufactured. In addition, FDA and other governmental health authorities have recently intensified their scrutiny of pharmaceutical companies' clinical development activities, both with respect to compliance with regulations related to the conduct of clinical trials, and with respect to their interpretations of the clinical trial requirements necessary to support a product submission. This has added to the obstacles and costs we face in bringing new products to market.

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

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

If we are unable to cost-effectively maintain an adequate flow of successful new products and new indications for existing products sufficient to cover our substantial research and development costs and the decline in sales of older products that either become subject to generic competition, or are displaced by competing products or therapies, this could have a material adverse effect on our business, financial condition or results of operations. For a description of the approval processes which must be followed to market our products, see the sections headed "Regulation" included in the descriptions of our four operating divisions under "Item 4. Information on the Company—Item 4.B Business Overview."

Increasing regulatory scrutiny of drug safety and efficacy has and is likely to continue to adversely affect us.

Following a series of widely publicized issues in recent years, health regulators are increasingly focusing on product safety. In addition, governmental authorities around the world have paid increased attention to the risk/benefit profile of pharmaceutical products with an increasing emphasis on product safety and on examining whether new products offer a significant benefit over older products in the same therapeutic class. These developments have led to requests for more clinical trial data, for the inclusion of a significantly higher number of patients in clinical trials, and for more detailed analyses of the trials. As a result, the already lengthy and expensive process of obtaining regulatory approvals for pharmaceutical products has become even more challenging.

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

Like our industry peers, we have been required by health authorities to conduct additional clinical trials, and to submit additional analyses of our data in order to obtain product approvals or reimbursement by government or private payors. We have had REMS and other such requirements imposed as a condition of approval of our new drugs. Because these regulatory developments can increase the costs of, and cause delays in obtaining approvals, and create an increased risk that products either will not be approved, or will be removed from the market after previously having been approved, these regulatory developments could have a material adverse effect on our business, financial condition and results of operations.

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

The growth of overall healthcare costs as a percentage of gross domestic product in many countries means that governments and payors are under intense pressure to control healthcare spending even more tightly. These pressures are particularly strong given the persistently weak global economic and financial environment. In addition, in certain countries, patients, healthcare providers and the media are increasingly raising questions about healthcare pricing issues. As a result, our businesses and the healthcare industry in general are operating in an ever more challenging environment with very significant pricing pressures. These ongoing pressures affect all of our businesses that rely on reimbursement—including Pharmaceuticals, Alcon, Sandoz and Vaccines and Diagnostics. They involve a number of cost-containment measures, such as government-imposed industry-wide price reductions, mandatory pricing systems, reference pricing systems, payors limiting access to innovative medicines based on cost-benefit analyses, an increase in imports of drugs from lower-cost countries to higher-cost countries, shifting of the payment burden to patients through higher co-payments, limiting physicians' ability to choose among competing medicines, mandatory substitution of generic drugs for the patented equivalent, and growing pressure on physicians to reduce the prescribing of patented prescription medicines. Such initiatives include the 2010 enactment of the Affordable Care Act in the US, its implementation, and ongoing efforts by the US Government to find additional savings from government healthcare programs.

As a result of such measures, we faced downward pricing pressures on our patented and generic drugs in many countries in 2013. For example, during 2013, the UK's National Institute for Health and Clinical Excellence (NICE) recommended against the UK National Health Service funding the use of our products *Jakavi* (myelofibrosis) and *Afinitor* (advanced breast cancer indication). NICE did recommend the funding of the use of our products *Xolair* (allergic asthma), *Lucentis* (diabetic macular edema indication), and *Jetrea* (vitreomacular traction), but only after we offered significant price discounts. Similarly, a German agency, the *Gemeinsamer Bundesausschuss* (G-BA), is conducting an analysis of the

benefits of drugs previously approved, and as part of that analysis refused to recommend the use of our product *Galvus* to treat type 2 diabetes. In China, the government has imposed significant price cuts on certain of our products. In the US, under the Affordable Care Act, there is a newly created entity, the Independent Payment Advisory Board, which has been granted unprecedented authority to implement broad actions to reduce future costs of the Medicare program. This could include required prescription drug discounts or rebates. In addition, as a result of the ongoing implementation of the Affordable Care Act, some patients may be required to switch from existing commercial health insurance policies to policies offered on the new healthcare exchanges. Should a significant number of patients switch to policies offered on the exchanges that offer lesser benefits than their prior policies, there could be an impact on the sales or pricing of our products.

We expect these efforts to control costs to continue in 2014 as healthcare payors around the globe, including government-controlled health authorities, insurance companies and managed care organizations, step up initiatives to reduce the overall cost of healthcare, restrict access to higher-priced new medicines, increase the use of generics and impose overall price cuts. For more information on price controls and on our challenging business environment see "Item 4. Information on the Company—Item 4.B Business Overview—Pharmaceuticals—Price Controls."

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

We are obligated to comply with the laws of all of the countries around the world in which we operate and sell products with respect to an extremely wide and growing range of activities, as well as with new requirements imposed on us from time to time as government and public expectations regarding acceptable corporate behavior change. For example, there are new laws in the US and in other countries around the world that will require us to be more transparent with respect to our interactions with healthcare professionals. To help us in our efforts to comply with the many requirements that impact us, we have a significant global compliance with law program in place, and we devote substantial time and resources to efforts to ensure that our business is conducted in a lawful and publicly acceptable manner. Nonetheless, despite our efforts, any failure to comply with law or with heightened public expectations could lead to substantial liabilities that may not be covered by insurance, or to other significant losses, and could affect our business and reputation.

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

In addition, governments and regulatory authorities around the world have been stepping up their compliance and law enforcement activities in recent years in key areas, including marketing practices, corruption, trade restrictions, embargo legislation, insider trading, antitrust, and data privacy, and are increasingly challenging practices previously considered to be legal. Responding to such investigations is costly, and requires an increasing amount of management's time and attention. In addition, such investigations may affect our reputation, create a risk of potential exclusion from government reimbursement programs in the US and other countries, and may lead to litigation. These factors have contributed to decisions by us and other companies in our industry, when deemed in their interest, to enter into settlement agreements with governmental authorities around the world prior to any formal decision by the authorities. These settlements have involved and may continue to involve large cash

payments, including the potential repayment of amounts allegedly obtained improperly, and other penalties, including treble damages. In addition, settlements of healthcare fraud cases 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 not expire until 2015. Also, matters underlying governmental investigations and settlements may be the subject of separate private litigation.

Our businesses are currently subject to a number of these governmental investigations and information requests by regulatory authorities. See "Item 18. Financial Statements—Note 20."

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

Adverse judgments or settlements in any of the significant investigations or cases against us could have a material adverse effect on our business, financial condition and results of operations.

For more detail regarding specific legal matters currently pending against us and provisions for such matters, see "Item 18. Financial Statements—Note 20." See also "—Our reliance on outsourcing and third parties for the performance of key business functions heightens the risks faced by our businesses" below.

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

The products we market and sell are either manufactured at our own dedicated manufacturing facilities or by third parties. In either case, we must ensure that all manufacturing processes comply with current Good Manufacturing Practices (cGMP) and other applicable regulations, as well as with our own high quality standards. The manufacture of our products is heavily regulated by governmental health authorities around the world, including the FDA. In recent years, such health authorities have intensified their scrutiny of manufacturers' compliance with such requirements, and are increasingly challenging practices that were previously considered acceptable. If we or our third-party suppliers fail to comply fully with these requirements and the health authorities' expectations, then we could be required to shut down our production facilities or production lines. This could lead to product shortages, or to our being entirely unable to supply products to patients for an extended period of time. And such shortages or shut downs have led to and could continue to lead to significant losses of sales revenue and to potential third-party litigation. In addition, health authorities have in some cases imposed significant penalties for such failures to comply with cGMP. A failure to comply fully with cGMP could also lead to a delay in the approval of new products to be manufactured at the impacted site.

Like our competitors, we have faced, and continue to face, significant manufacturing issues. For example, in November 2011, we received a Warning Letter from the FDA with respect to three of our Sandoz Division's facilities—in Broomfield, Colorado, Wilson, North Carolina, and Boucherville, Canada. The Warning Letter raised concerns regarding these facilities' compliance with FDA cGMP regulations. It stated that until the FDA confirms that the deficiencies have been corrected, the FDA can recommend that any pending applications or supplements listing Novartis affiliates as a drug manufacturer not be approved. In addition, FDA may refuse requests to issue export certificates to our Sandoz US affiliate, or import certificates to our Sandoz Canada affiliates. The letter further states that other federal agencies may take the Warning Letter into account when considering the award of contracts. In addition, in May 2013 we received a Warning Letter from the FDA concerning the oncology injectables manufacturing

facility in Unterach, Austria. The letter contained two observations which followed an agency inspection at the site in October 2012, and are related to historical visual inspection practices for products manufactured at the site. In the fourth quarter of 2012, the FDA formally notified Sandoz that the compliance status of its Broomfield, Colorado site has been upgraded. In January 2014, the FDA formally notified Sandoz that the compliance status of its Boucherville, Canada site was upgraded. Work continues on closing out committed actions across the sites.

Separately, in December 2011, we suspended operations and shipments from the OTC Division facility located at Lincoln, Nebraska, which also produces certain products for our Animal Health Division. This action was taken to accelerate maintenance and other improvement activities at the site. Subsequently, in 2012 and 2013, we recalled certain OTC Division products that were produced at the Lincoln facility. We have made progress in the remediation of quality issues at Lincoln, and the FDA closed out its October 2013 inspection of the site with zero Form 483 observations. However, we have also outsourced the production of certain Lincoln products, and have discontinued others. As of the date of this Form 20-F, it is not possible to determine when the plant will resume full operations.

In December 2012, our Alcon Division received an FDA Warning Letter following an inspection at the *LenSx* laser manufacturing site in Aliso Viejo, California. Alcon responded in writing to the FDA, and in February 2013, FDA responded to Alcon acknowledging that the corrective actions described in Alcon's written response appear to address the items identified in the Warning Letter. The FDA will verify these corrective actions during its next scheduled inspection of the site. The items noted in the Warning Letter do not affect the safety or effectiveness of the *LenSx* laser, or impact Alcon's ability to sell the product.

As a result of such manufacturing issues, we were unable to supply certain products to the market for significant periods of time, and so have suffered and may continue to suffer significant losses in sales and market share. These supply issues have required us to outsource the production of certain key products that were previously manufactured in our own production facilities, which may limit the potential profitability of such products. In addition, to meet health authority and our own high quality standards, we have expended considerable resources to upgrade and remediate issues at our sites. Should we fail to complete the planned improvements at the sites in a timely manner, including those done in agreement with the FDA, then we may suffer significant additional losses in sales and drainage of resources, and we could be subject to legal action without further notice including, without limitation, seizure and injunction.

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

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

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

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

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

The persistently weak global economic and financial environment may have a material adverse effect on our results.

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

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

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

future," below. In addition, the financial situation may also result in a lower return on our financial investments, and a lower value on some of our assets. Alternately, inflation could accelerate, which could lead to higher interest rates, which would increase our costs of raising capital.

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

At the same time, significant changes and volatility in the financial markets, in the consumer and business environment, in the competitive landscape and in the global political and security landscape make it increasingly difficult for us to predict our revenues and earnings into the future. As a result, any revenue or earnings guidance or outlook which we have given or might give may be overtaken by events, or may otherwise turn out to be inaccurate. Though we endeavor to give reasonable estimates of future revenues and earnings at the time we give such guidance, based on then-current knowledge and conditions, there is a significant risk that such guidance or outlook will turn out to be, or to have been, incorrect.

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

In the past year, the US dollar, our reporting currency, has significantly increased in value against certain other world currencies. However, in prior years, the US dollar suffered significant decreases in value. In addition, in recent years, unresolved fiscal issues in the US and in many European economies, and investor concerns about the future of the Euro, have led to the flight of investor capital to the perceived safety of the Swiss franc, causing the Swiss franc to rise significantly in value. Because a significant portion of our earnings and expenditures are in currencies other than the US dollar, including expenditures in Swiss francs which are significantly higher than our revenues in Swiss francs, this volatility can have a significant and often unpredictable impact on our reported net sales and earnings. As has happened in the recent past, changes in exchange rates between the US dollar and other currencies can result in increases or decreases in our reported sales, costs and earnings as expressed in US dollars. Fluctuations in exchange rates between the US dollar and other currencies may also affect the reported value of our assets measured in US dollars and the components of shareholders' equity. In addition, there is 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 currency translation adjustments included in our consolidated equity. For more information on the effects of currency fluctuations on our consolidated financial statements and on how we manage currency risk, see "Item 5. Operating and Financial Review and Prospects—Item 5.A Operating Results—Effects of Currency Fluctuations," "Item 5.A Operating Results—Currency Impact on Key Figures," "Item 5.B Liquidity and Capital Resources," "Item 11. Quantitative and Qualitative Disclosures about Market Risk", and "Item 18. Financial Statements—Note 29."

We may not successfully achieve our goals in strategic acquisitions or divestments of businesses.

As part of our growth strategy, we evaluate and pursue potential strategic business acquisitions and divestitures to expand or complement our existing businesses, or to enable us to focus more sharply on our strategic businesses. We cannot ensure that suitable acquisition candidates will be identified. Acquisition activities can be thwarted by overtures from competitors for the targeted candidates, potentially increasing prices demanded by sellers, governmental regulation (including market concentration limitations) and replacement product developments in our industry. Further, after an acquisition, successful integration of

the venture can be complicated by corporate cultural differences, difficulties in retention of key personnel, customers and suppliers, and coordination with other products and processes. Also, acquisitions could divert management's attention from our existing business, and could result in liabilities being incurred that were not known at the time of acquisition or the creation of tax or accounting issues. Similarly, we cannot ensure that suitable buyers will be identified for businesses that we wish to divest. Neither can we ensure that we will correctly select businesses as candidates for divestiture, or that any expected strategic benefits, synergies or opportunities will arise as a result of any divestiture. If we fail to timely recognize or address these matters or to devote adequate resources to them, we may fail to achieve our growth strategy or otherwise not realize the intended benefits of any acquisition or divestiture.

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

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

We regularly review our long-lived intangible and tangible assets, including identifiable intangible assets, investments in associated companies and goodwill, for impairment. Goodwill, acquired research and development, and acquired development projects not yet ready for use are subject to impairment review at least annually. Other long-lived assets are reviewed for impairment when there is an indication that an impairment may have occurred. Impairment testing under IFRS may lead to impairment charges in the future. Any significant impairment charges could have a material adverse effect on our results of operations and financial condition. In 2013, for example, we recorded intangible asset impairment charges of $116 million. Of this, $57 million relates to the Alcon Division, and $59 million to all other divisions. For a detailed discussion of how we determine whether an impairment has occurred, what factors could result in an impairment and the increasing impact of impairment charges on our results of operations, see "Item 5. Operating and Financial Review and Prospects—Item 5.A Operating Results—Critical Accounting Policies and Estimates—Impairment of Long-Lived Intangible and Tangible Assets" and "Item 18. Financial Statements—Notes 1 and 11."

Our indebtedness could adversely affect our operations.

As of December 31, 2013 we had $11.2 billion of non-current financial debt and $6.8 billion of current financial debt. Our current and long-term debt requires us to dedicate a portion of our cash flow to service interest and principal payments and may limit our ability to engage in other transactions and otherwise may place us at a competitive disadvantage relative to our competitors that have less debt. We may have difficulty refinancing our existing debt or incurring new debt on terms that we would consider to be commercially reasonable, if at all.

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

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

violations of law, as well. Any such failures by third parties could have a material adverse effect on our business, financial condition or results of operations.

In particular, in many countries, including many developing markets, we rely heavily on third party distributors and other agents for the marketing and distribution of our products. Many of these third parties do not have internal compliance resources comparable to those within our organization. Some of these countries are plagued by corruption. If our efforts to screen our third party agents and detect cases of potential misconduct fail, we could be held responsible for the noncompliance of these third parties with applicable laws and regulations, which may have a material adverse effect on our reputation and on our business, financial condition or results of operations.

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

At a time of slowing growth in sales of healthcare products in industrialized countries, many emerging markets have experienced proportionately higher sales growth and an increasing contribution to the industry's global performance. In 2013, we generated $14.7 billion, or approximately 25% (2012: 24%) of net sales from Emerging Growth Markets—which comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand—as compared with $43.2 billion, or approximately 75% (2012: 76%) of our net sales, in the Established Markets. However, combined net sales in the Emerging Growth Markets grew 10% in constant currency in 2013, compared to 2% sales growth in constant currency in the Established Markets during the same period. As a result of this trend, we have been taking steps to increase our presence in the Emerging Growth Markets.

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

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

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

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

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

Our Sandoz Division achieves significant revenue opportunities when it secures and maintains exclusivity periods granted for generic products in certain markets—particularly the 180-day exclusivity period granted in the US by the Hatch-Waxman Act—and when it is able to develop differentiated products with few, if any, generic competitors. Failure to obtain and maintain these market opportunities could have an adverse effect on the success of Sandoz. In addition, the division faces intense competition from patented pharmaceuticals companies, which commonly take aggressive steps to limit the availability of exclusivity periods or to reduce their value, and from other generic pharmaceuticals companies, which aggressively compete for exclusivity periods and for market share of generic products that may be identical to certain of our generic products. These activities may increase the costs and risks associated with our efforts to introduce generic products and may delay or entirely prevent their introduction. See also "—Our research and development efforts may not succeed in bringing new products to market, or to do so cost-efficiently enough, or in a manner sufficient to grow our business and replaced lost revenues and income" above, with regard to the risks involved in our efforts to develop differentiated generic products.

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

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

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

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

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

Our industry continues to be challenged by the vulnerability of distribution channels to illegal counterfeiting and the presence of counterfeit products in a growing number of markets and over the Internet. Counterfeit products are frequently unsafe or ineffective, and can potentially be life-threatening. To distributors and patients, counterfeit products may be visually indistinguishable from the authentic version. Reports of adverse reactions to counterfeit drugs or increased levels of counterfeiting could materially affect patient confidence in the authentic product, and harm the business of companies such as ours. Additionally, it is possible that adverse events caused by unsafe counterfeit products would mistakenly be attributed to the authentic product. If a product of ours was the subject of counterfeits, we could incur substantial reputational and financial harm in the longer term.

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

Increasingly, a significant portion of our global sales are made to a relatively small number of US drug wholesalers, retail chains and other purchasing organizations. For example, our three most important customers globally are all in the US, and accounted for approximately 10%, 9% and 7%, respectively, of Group net sales in 2013. The largest trade receivables outstanding were for these three customers, amounting to 9%, 7% and 5%, respectively, of the Group's trade receivables at December 31, 2013. The trend has been toward further consolidation among distributors and retailers, both in the US and internationally. As a result, our customers are gaining additional purchasing leverage, which increases the pricing pressures facing our businesses. Moreover, we are exposed to a concentration of credit risk as a result of this concentration among our customers. If one or more of our major customers experienced financial difficulties, the effect on us would be substantially greater than in the past. This could have a material adverse effect on our business, financial condition and results of operations.

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

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

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

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

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

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

Environmental liabilities may adversely impact our results of operations.

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

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

Our business is increasingly dependent on critical, complex and interdependent information technology systems, including Internet-based systems, to support business processes as well as internal and external communications. The size and complexity of our computer systems make them potentially vulnerable to breakdown, malicious intrusion, malware and other cyber-attacks, which may result in the impairment of production and key business processes.

In addition, our systems are potentially vulnerable to data security breaches—whether by employees or others—which may expose sensitive data to unauthorized persons. Such data security breaches could lead to the loss of trade secrets or other intellectual property, or could lead to the public exposure of personal information (including sensitive personal information) of our employees, clinical trial patients, customers and others.

Such disruptions and breaches of data security could have a material adverse effect on our business, financial condition and results of operations.

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

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

Earthquakes and other natural disasters could adversely affect our business.

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

Our corporate headquarters, the headquarters of our Pharmaceuticals and Animal Health Divisions, and certain of our major Pharmaceuticals Division production and research facilities are located near earthquake fault lines in Basel, Switzerland. In addition, other major facilities of several divisions are located near major earthquake fault lines in various locations around the world. In the event of a major earthquake, we could experience business interruptions, destruction of facilities and loss of life, all of which could have a material adverse effect on our business, financial condition and results of operations.

Risks Related To Our ADRs

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

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

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

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

Item 4. Information on the Company

4.A History and Development of Novartis

Novartis AG

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

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

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

Important Corporate Developments 2011-2013

2013

November	Novartis announces a $5.0 billion share buyback. The buyback begins on the date of the announcement and will be executed over two years on the second trading line.
	Novartis announces a definitive agreement to divest its blood transfusion diagnostics unit to Grifols S.A. of Spain, for $1.7 billion. This transaction was completed in January 2014.
	Novartis announces that it will co-locate certain scientific resources in order to improve the efficiency and effectiveness of its global research organization. Changes include establishing a respiratory research group in Cambridge, Massachusetts, a proposal to close the Horsham, UK, research site, a plan to exit from the Vienna, Austria research site, consolidation of the US-based component of oncology research from Emeryville, California to Cambridge, Massachusetts, closure of the biotherapeutics development unit in La Jolla, California, and a plan to exit research in topical applications for dermatology.
September	Novartis announces that it has entered into an exclusive global licensing and research collaboration agreement with Regenerex LLC, a biopharmaceutical company based in Louisville, Kentucky, for use of the company's novel Facilitating Cell Therapy (FCRx) platform.
August	Joerg Reinhardt, Ph.D., assumes role of Chairman of the Board of Directors of Novartis AG on August 1.
July	The Novartis Board of Directors announces a final agreement with its former Chairman, Dr. Daniel Vasella. From the date of the Annual General Meeting held on February 22, 2013, until October 31, 2013, Dr. Vasella was to provide certain transitional services, including select Board mandates with subsidiaries of Novartis and support of the ad-interim Chairman and the new Chairman. For his transitional services during such period, Dr. Vasella would receive cash of CHF 2.7 million, and 31,724 unrestricted shares

	as of October 31, 2013 (the market value of the shares as of the date of the announcement was approximately CHF 2.2 million). In addition, from November 1, 2013, to December 31, 2016, Dr Vasella will receive a minimum of $250,000 per annum in exchange for making himself available to Novartis, at Novartis' request and discretion, to provide specific consulting services, such as the coaching of high-potential associates of Novartis and speeches at key Novartis events at a daily fee rate of $25,000, which will be offset against the $250,000 minimum annual payment. During November and December 2013, Dr. Vasella did not provide any coaching to associates and did not receive any compensation for this period.
	Novartis announces that it has entered into a development and licensing agreement with Biological E Limited (BioE), a biopharmaceutical company based in India, for two vaccines to protect against typhoid and paratyphoid fevers. The agreement advances the Novartis goal to deliver accessible and affordable vaccines that address unmet medical need in endemic regions.
April	Novartis and Malaria No More, a leading global charity determined to end malaria deaths, announce that they are joining forces on the Power of One campaign to help close the treatment gap and accelerate progress in the fight against malaria. Over the next three years, Novartis will support the campaign financially and also donate up to three million full courses of its pediatric antimalarial drug to match the treatments donated by the public, doubling the impact of these donations.
February	Novartis announces that the Novartis AG Board of Directors and Dr. Vasella agreed to cancel his non-competition agreement and all related conditional compensation. The agreement was to take effect after Dr. Vasella stepped down as Chairman of the Board at the Novartis Annual General Meeting on February 22, 2013.
January	Novartis announces that, at his own wish, Novartis AG Chairman of the Board of Directors Dr. Daniel Vasella will not stand for re-election as a member of the Board of Directors at the Annual General Meeting to be held on February 22, 2013. The Board of Directors proposed the election of, among others, Joerg Reinhardt, Ph.D., as a member of the Board for a term of office beginning on August 1, 2013, and ending on the day of the Annual General Meeting in 2016. The Board announced its intention to elect Joerg Reinhardt as Chairman of the Board of Directors as from August 1, 2013. The Board of Directors further announced its intention to elect its current Vice-Chairman, Ulrich Lehner, Ph.D., as Chairman of the Board of Directors for the period from February 22, 2013, until the new Chairman took office.
2012	
September	Novartis successfully completes a $2.0 billion bond offering in two tranches.
August	Novartis and the University of Pennsylvania (Penn) form a broad-based Research & Development alliance to advance novel T-cell immunotherapies to treat cancer. Novartis and Penn enter into a multi-year collaboration to study chimeric antigen receptor (CAR) technology for the treatment of cancer. The parties establish a joint Center for Advanced Cellular Therapies at Penn to develop and manufacture CARs. Novartis licenses worldwide rights to the first CAR investigational therapy, CART-19, from Penn, and obtains worldwide commercial rights to products from the collaboration. Novartis will provide an up-front payment to Penn, research funding, funding for the establishment of the CACT and milestone payments for the achievement of certain clinical, regulatory and commercial milestones and royalty payments.

May — Sandoz announces an agreement to acquire Fougera Pharmaceuticals, based in Melville, New York, for $1.525 billion, to make Sandoz the number one generic dermatology medicines company globally and in the US, and to strengthen Sandoz's differentiated products strategy. The acquisition was completed in July 2012.

March — Alcon gains exclusive rights outside the US to ocriplasmin, a potential first pharmacological treatment for vitreomacular adhesion. Alcon pays ThromboGenics an upfront payment of EUR 75 million, with potential additional payments based on milestones, and on royalties on sales.

January — Novartis extends its commitment to help achieve the final elimination of leprosy. Our new five-year commitment includes a donation of treatments worth an estimated $22.5 million, and is expected to reach an estimated 850,000 patients. Novartis will also intensify efforts to build a multi-stakeholder initiative in a final push against leprosy. We have a long history in fighting leprosy, donating medicines and developing programs to support patients, valued at more than $100 million since 1986.

Novartis announces the restructuring of its US Pharmaceuticals business to strengthen its competitive position in light of the loss of patent protection for *Diovan* and the expected impact on the worldwide sales of *Tekturna*/*Rasilez* after the termination of the ALTITUDE study. The restructuring of the US General Medicines business results in a reduction of 1,960 positions and leads to an exceptional charge of $160 million in the first quarter of 2012 and to expected annual savings of approximately $450 million by 2013.

2011

December — Following the seventh interim review of data from the ALTITUDE study with *Tekturna*/*Rasilez* (aliskiren), Novartis decided to terminate the trial based on the recommendation of the independent Data Monitoring Committee (DMC) overseeing the study. The DMC concluded that patients were unlikely to benefit from treatment on top of standard anti-hypertensive medicines, and identified higher adverse events in patients receiving *Tekturna*/*Rasilez* in addition to standard of care in the trial. Novartis has written to healthcare professionals worldwide recommending that hypertensive patients with diabetes should not be treated with *Tekturna*/*Rasilez*, or combination products containing aliskiren, if they are also receiving an angiotensin-converting enzyme (ACE) inhibitors or an angiotensin receptor blocker (ARB). As an additional precautionary measure, Novartis has ceased promotion of *Tekturna*/*Rasilez*-based products for use in combination with an ACE or ARB. A reassessment of the future sales potential of *Tekturna*/*Rasilez* in light of the ALTITUDE results has led to an exceptional charge of approximately $900 million (of which approximately $800 million are non-cash) recognized in the fourth quarter of 2011. The charge comprises impairments to intangible and manufacturing assets and excess inventory together with trial wind down and other exit costs. The accounting charge is triggered by lower sales expectations and did not seek to anticipate the results of our ongoing discussions with health authorities concerning *Tekturna*/*Rasilez*.

We voluntarily suspended operations and shipments from the OTC Division facility located at Lincoln, Nebraska. This action was taken to accelerate maintenance and other improvement activities at the site. Subsequently, in January 2012, we voluntarily recalled certain OTC Division products, as well as an Animal Health Division product that were produced at the Lincoln facility. We took a charge of $115 million related to the temporary suspension of production at the facility.

Novartis discontinues development of PRT128 for acute coronary syndrome and chronic coronary heart disease, and SMC021 for osteoporosis and osteoarthritis, resulting in intangible asset and other impairment charges of approximately $160 million.

October	Novartis discontinues development of AGO178 for major depressive disorder, resulting in an intangible asset impairment charge of $87 million.
April	Following the acquisition of the remaining non-controlling interest in Alcon, Inc., on April 8, an Extraordinary General Meeting of Novartis shareholders approved the merger of Alcon, Inc. into Novartis, creating the global leader in eye care. As a result, the Alcon Division became the newest division in our strategically diversified healthcare portfolio. In order to complete the transaction, the Extraordinary General Meeting authorized the Board of Directors of Novartis to issue 108 million new shares which, together with 57 million shares held in treasury, were used to fund part of the merger consideration.
	Novartis sells global rights to Elidel®, a medicine to treat atopic dermatitis, for $420 million to Meda.
March	Novartis completes acquisition of majority stake in Zhejiang Tianyuan vaccines company in China. The total amount paid for the 85% interest was $194 million, excluding $39 million of cash acquired.
January	Novartis announces agreement to acquire Genoptix, Inc. in an all cash tender offer. The acquisition, which was completed in March, of 100% of the shares of Genoptix totaled $458 million, excluding the $24 million of cash acquired. Genoptix laboratory service offerings are expected to provide a strategic fit with our diagnostics activities, and to complement our internal capabilities aimed at improving health outcomes by advancing individualized treatment programs.

For information on our principal expenditures on property, plants and equipment, see "Item 4. Information on the Company—4.D Property, Plants and Equipment." For information on our significant investments in research and development, see the sections headed "Research and Development" included in the descriptions of our six operating divisions under "Item 4. Information on the Company—4.B Business Overview."

4.B Business Overview

OVERVIEW

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

The Group's wholly-owned businesses are organized into six global operating divisions, and we report our results in the following five segments:

- Pharmaceuticals: Innovative patent-protected prescription medicines
- Alcon: Surgical, ophthalmic pharmaceutical and vision care products
- Sandoz: Generic pharmaceuticals
- Vaccines and Diagnostics: Preventive human vaccines and blood testing diagnostics (following the January 9, 2014 completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., the division now consists only of Vaccines)
- Consumer Health: OTC (over-the-counter medicines) and Animal Health

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

Novartis achieved net sales of $57.9 billion in 2013, while net income amounted to $9.3 billion. Research & Development expenditure in 2013 amounted to $9.9 billion ($9.7 billion excluding impairment and amortization charges). Of the Group's total net sales, $14.7 billion, or 25%, came from Emerging Growth Markets, and $43.2 billion, or 75%, came from Established Markets. Emerging Growth Markets (EGMs) comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Headquartered in Basel, Switzerland, our Group companies employed approximately 135,696 full-time equivalent associates as of December 31, 2013, and sell products in approximately 155 countries around the world.

Pharmaceuticals Division

Pharmaceuticals researches, develops, manufactures, distributes and sells patented prescription medicines and is organized in the following business franchises: Primary Care, consisting of Primary Care medicines and Established Medicines; and Specialty Care, consisting of Ophthalmology, Neuroscience, Integrated Hospital Care, and Critical Care medicines. Novartis Oncology is organized as a business unit, responsible for the global development and marketing of oncology products. In 2013, the Pharmaceuticals Division accounted for $32.2 billion, or 56%, of Group net sales, and for $9.4 billion, or 80%, of Group operating income (excluding Corporate income and expense, net).

Alcon Division

Our Alcon Division researches, develops, manufactures, distributes and sells eye care products and technologies to serve the full life cycle of eye care needs. Alcon offers a broad range of products to treat many eye diseases and conditions, and is organized into three businesses: Surgical, Ophthalmic Pharmaceuticals and Vision Care. The Surgical portfolio includes technologies and devices for cataract, retinal, glaucoma and refractive surgery, as well as intraocular lenses to treat cataracts and refractive errors, like presbyopia and astigmatism. Alcon also provides viscoelastics, surgical solutions, surgical packs, and other disposable products for cataract and vitreoretinal surgery. In Ophthalmic Pharmaceuticals, the portfolio includes treatment options for elevated intraocular pressure caused by glaucoma, anti-infectives to aid in the treatment of bacterial infections and bacterial conjunctivitis, and ophthalmic solutions to treat inflammation and pain associated with ocular surgery, as well as an intravitreal injection for vitreomacular traction including macular hole. The pharmaceutical product portfolio also includes eye and nasal allergy treatments, as well as over-the-counter dry eye relief and ocular vitamins. The Vision Care portfolio comprises daily disposable, monthly replacement, and color-enhancing contact lenses, as well as a complete line of contact lens care products including multi-purpose and hydrogen-peroxide based solutions, rewetting drops and daily protein removers. In 2013, Alcon accounted for $10.5 billion, or 18%, of Group net sales, and for $1.2 billion, or 11%, of Group operating income (excluding Corporate income and expense, net).

Sandoz Division

Our Sandoz Division develops, manufactures, distributes and sells prescription medicines, as well as pharmaceutical and biotechnological active substances, which are not protected by valid and enforceable third-party patents. Sandoz has activities in Retail Generics, Anti-Infectives and Biopharmaceuticals & Oncology Injectables. In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals to third parties. Retail Generics includes the specialty areas

of Dermatology, Respiratory and Ophthalmics. In Anti-Infectives, Sandoz manufactures active pharmaceutical ingredients and intermediates—mainly antibiotics—for internal use by Retail Generics and for sale to third-party customers. In Biopharmaceuticals, Sandoz develops, manufactures and markets protein- or other biotechnology-based products (known as biosimilars or follow-on biologics) and provides biotechnology manufacturing services to other companies, and in Oncology Injectables, Sandoz develops, manufactures and markets cytotoxic products for the hospital market. In 2013, Sandoz accounted for $9.2 billion, or 16%, of Group net sales, and for $1.0 billion, or 9%, of Group operating income (excluding Corporate income and expense, net).

Vaccines and Diagnostics Division

Our Vaccines and Diagnostics Division consists of two activities: Vaccines and Diagnostics. Following the January 9, 2014, completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., the Division now consists only of Vaccines. Vaccines researches, develops, manufactures, distributes and sells human vaccines worldwide. Diagnostics researched, developed, distributed and sold blood testing and molecular diagnostics products. In 2013, the Vaccines and Diagnostics Division accounted for $2.0 billion, or 3%, of Group net sales.

Consumer Health

Consumer Health consists of two Divisions: Over-the-Counter (OTC) and Animal Health. Each has its own research, development, manufacturing, distribution and selling capabilities, but neither is material enough to the Group to be separately disclosed as a segment. OTC offers readily available consumer medicine, and Animal Health provides veterinary products for farm and companion animals. In 2013, Consumer Health accounted for $4.1 billion, or 7%, of Group net sales, and for $0.2 billion, or 1%, of Group operating income (excluding Corporate income and expense, net).

PHARMACEUTICALS

Overview

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

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

- Oncology
- Primary Care
  - Primary Care Medicines
  - Established Medicines
- Specialty Care
  - Ophthalmology
  - Neuroscience
  - Integrated Hospital Care
  - Critical Care

The Pharmaceuticals Division is organized into global business franchises responsible for the commercialization of various products as well as Novartis Oncology, a business unit responsible for the global development and commercialization of oncology products.

The Pharmaceuticals Division is the largest contributor among the six divisions of Novartis and reported consolidated net sales of $32.2 billion in 2013, which represented 56% of the Group's net sales.

The division is made up of approximately 80 affiliated companies which together employed 65,262 full-time equivalent associates as of December 31, 2013, and sell products in approximately 155 countries. The product portfolio of the Pharmaceuticals Division includes more than 50 key marketed products, many of which are leaders in their respective therapeutic areas. In addition, the division's portfolio of development projects includes 144 potential new products and new indications or new formulations for existing products in various stages of clinical development.

Pharmaceuticals Division Products

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

Key Marketed Products

Business franchise	Product	Common name	Indication[1]	Formulation
Oncology	*Afinitor/Votubia*	everolimus	Advanced renal cell carcinoma after failure of treatment with VEGF-targeted therapy Advanced pancreatic neuroendocrine tumors SEGA associated with tuberous sclerosis Renal angiomyolipoma associated with tuberous sclerosis Advanced breast cancer in post-menopausal HR+/HER2− women in combination with exemestane, after failure of anastrozole or letrozole	Tablet Dispersible tablets for oral suspension
	Exjade	deferasirox	Chronic iron overload due to blood transfusions and non-transfusion dependent thalassemia	Dispersible tablet for oral suspension
	Femara	letrozole	Hormone receptor positive early breast cancer in postmenopausal women following surgery (upfront adjuvant therapy) Early breast cancer in post-menopausal women following standard tamoxifen therapy (extended adjuvant therapy) Advanced breast cancer in post-menopausal women (both as first- and second-line therapies)	Tablet
	Gleevec/ Glivec	imatinib mesylate/ imatinib	Certain forms of Ph+ chronic myeloid leukemia Certain forms of KIT+ gastrointestinal stromal tumors Certain forms of acute lymphoblastic leukemia Dermatofibrosarcoma protuberans Hypereosinophilic syndrome Aggressive systemic mastocytosis Myelodysplastic/myeloproliferative diseases	Tablet Capsules
	Jakavi	ruxolitnib	Disease-related splenomegaly or symptoms in adult patients with primary myelofibrosis (also known as chronic idiopathic myelofibrosis), post-polycythemia vera myelofibrosis or post-essential thrombocythemia myelofibrosis	Tablet
	Sandostatin LAR & Sandostatin SC	octreotide acetate for injectable suspension & octreotide acetate	Acromegaly Symptom control for certain forms of neuroendocrine tumors Delay of tumor progression in patients with midgut tumors	Vial Ampoule/pre-filled syringe
	Signifor	pasireotide	Cushing's disease	Ampoule/syringe
	Tasigna	nilotinib	Certain forms of chronic myeloid leukemia in patients resistant or intolerant to prior treatment including *Gleevec/Glivec* First line chronic myeloid leukemia	Capsule
	Zometa	zoledronic acid	Skeletal-related events from bone metastases (cancer that has spread to the bones) Hypercalcemia of malignancy	Vial Ready-to-use

[1] Indications vary by country.

Business franchise	Product	Common name	Indication[1]	Formulation
Primary Care				
Primary Care Medicines	*Amturnide*	aliskiren, amlodipine besylate and hydrochlorothiazide	Hypertension	Tablet
	Arcapta Neohaler/ Onbrez Breezhaler	indacaterol	Chronic obstructive pulmonary disease	Inhalation powder hard capsules
	Diovan	valsartan	Hypertension Heart failure Post-myocardial infarction	Tablets/capsules/oral solution
	Diovan HCT/ Co-Diovan	valsartan and hydrochlorothiazide	Hypertension	Tablet
	Eucreas	vildagliptin and metformin	Type 2 diabetes	Tablet
	Exforge	valsartan and amlodipine besylate	Hypertension	Tablet
	Exforge HCT	valsartan, amlodipine besylate and hydrochlorothiazide	Hypertension	Tablet
	Galvus	vildagliptin	Type 2 diabetes	Tablet
	Seebri Breezhaler	glycopyrronium bromide	Chronic obstructive pulmonary disease	Inhalation powder hard capsules
	Tekamlo/ Rasilamlo	aliskiren and amlodipine besylate	Hypertension	Tablet
	Tekturna/Rasilez	aliskiren	Hypertension	Tablet
	Tekturna HCT/ Rasilez HCT	aliskiren and hydrochlorothiazide	Hypertension	Tablet
	Ultibro Breezhaler	indacaterol / glycopyrronium bromide	Chronic obstructive pulmonary disease	Inhalation powder hard capsules
	Xolair	omalizumab	Severe allergic asthma	Lyophilized powder for reconstitution and liquid formulation in pre-filled syringes as subcutaneous injection
Established Medicines	*Cibacen*	benazepril hydrochloride	Hypertension Adjunct therapy in congestive heart failure Progressive chronic renal insufficiency	Tablet
	Clozaril/ Leponex	clozapine	Treatment-resistant schizophrenia Prevention and treatment of recurrent suicidal behavior in patients with schizophrenia and psychotic disorders	Tablet
	Coartem/ Riamet	artemether and lumefantrine	*Plasmodium falciparum* malaria or mixed infections that include *Plasmodium falciparum* Standby emergency malaria treatment	Tablet Dispersible tablet for oral suspension
	Focalin & Focalin XR	dexmethylphenidate HCl & dexmethylphenidate extended release	Attention deficit hyperactivity disorder	Tablet Capsule
	Foradil	formoterol	Asthma Chronic obstructive pulmonary disease	*Aerolizer* (capsules) Aerosol
	Lamisil	terbinafine (terbinafine hydrochloride)	Fungal infection of the skin and nails caused by dermatophyte fungi *Tinea capitis* Fungal infections of the skin for the treatment of tinea corporis, tinea cruris, tinea pedis and yeast infections of the skin caused by the genus *Candida* Onychomycosis of the toenail or fingernail due to dermatophytes	Tablet Cream DermGel Solution Spray

[1] Indications vary by country.

Business franchise	Product	Common name	Indication[1]	Formulation
	Lescol/ *Lescol XL*	fluvastatin sodium	Hypercholesterolemia and mixed dyslipidemia in adults Secondary prevention of major adverse cardiac events Slowing the progression of atherosclerosis Heterozygous familial hypercholesterolemia in children and adolescents	Capsule Tablet
	Reclast/ *Aclasta*	zoledronic acid 5 mg	Treatment of osteoporosis in postmenopausal women Treatment of osteoporosis in men Treatment and prevention of glucocorticoid-induced osteoporosis Prevention of postmenopausal osteoporosis Treatment of Paget's disease of the bone	Intravenous infusion
	Ritalin	methylphenidate HCl	Attention deficit hyperactivity disorder and narcolepsy	Tablet
	Ritalin LA	methylphenidate HCl modified release	Attention deficit hyperactivity disorder	Capsule
	Tegretol	carbamazepine	Epilepsy Pain associated with trigeminal neuralgia Acute mania and bipolar affective disorders	Tablet Chewable tablet Oral suspension Suppository
	Trileptal	oxcarbazepine	Epilepsy	Tablet Oral suspension
	Vivelle-Dot/ *Estradot*	estradiol hemihydrate	Estrogen replacement therapy for the treatment of the symptoms of natural or surgically induced menopause Prevention of postmenopausal osteoporosis	Transdermal patch
	Voltaren/ *Cataflam*	diclofenac sodium/ potassium/resinate/ free acid	Inflammatory and degenerative forms of rheumatism Post-traumatic and post-operative pain, inflammation and swelling Painful and/or inflammatory conditions such as migraine, ear, nose and throat, or dysmenorrhoea	Tablet Capsule Oral drop Ampoule for injection Suppository Gel Powder for oral solution Transdermal patch

[1] Indications vary by country.

Business franchise	Product	Common name	Indication[1]	Formulation
Specialty Care				
Ophthalmology	*Lucentis*	ranibizumab	Wet age-related macular degeneration Visual impairment due to diabetic macular edema Visual impairment due to macular edema secondary to retinal vein occlusion Visual impairment due to choroidal neovascularization secondary to pathologic myopia	Intravitreal injection
Neuroscience	*Comtan*	entacapone	Parkinson's disease patients who experience end-of-dose motor (or movement) fluctuations	Tablet
	Exelon & *Exelon* Patch	rivastigmine tartrate & rivastigmine transdermal system	Mild-to-moderate Alzheimer's disease dementia Severe Alzheimer's disease dementia Dementia associated with Parkinson's disease	Capsule Oral solution Transdermal patch
	Extavia	interferon beta-1b	Relapsing remitting and/or relapsing forms of multiple sclerosis in adult patients	Subcutaneous injection
	Fanapt	iloperidone	Schizophrenia	Tablet
	Gilenya	fingolimod	Relapsing forms of multiple sclerosis	Capsule
	Stalevo	carbidopa, levodopa and entacapone	Parkinson's disease patients who experience end-of-dose motor (or movement) fluctuations	Tablet
Integrated Hospital Care	*Cubicin*	daptomycin	Complicated skin and skin structure infections caused by Gram-positive susceptible isolates *Staphylococcus aureus* bloodstream infections (bacteremia), including those with right-sided infective endocarditis, caused by susceptible isolates	Powder for solution, injection or infusion
	Ilaris	canakinumab	Cryopyrin-associated periodic syndrome Systemic juvenile idiopathic arthritis	Lyophilized powder for reconstitution for subcutaneous injection
	Myfortic	mycophenolic acid (as mycophenolate sodium)	Prophylaxis of organ rejection in patients receiving allogeneic renal transplants	Gastro-resistant tablet
	Neoral/ *Sandimmune*	cyclosporine, USP Modified	Prevention of rejection following certain organ transplantation Non-transplantation autoimmune conditions such as severe psoriasis and severe rheumatoid arthritis	Capsule Oral solution Intravenous (Sandimmune)
	Simulect	basiliximab	Prevention of acute organ rejection in de novo renal transplantation	Vial for injection or infusion
	Tyzeka/*Sebivo*	telbivudine	Chronic hepatitis B	Tablet Oral solution
	Zortress/ *Certican*	everolimus	Prevention of organ rejection (heart, liver and kidney)	Tablet Dispersible tablet
Critical Care	*TOBI*/*TOBI Podhaler*	tobramycin	*Pseudomonas aeruginosa* infection in cystic fibrosis	Nebulizer solution/ Inhalation powder

[1] Indications vary by country and/or formulation.

Selected Leading Products

Oncology

- *Gleevec*/*Glivec* (imatinib mesylate/imatinib mesylate) is a kinase inhibitor approved to treat patients with metastatic and/or unresectable KIT+ gastrointestinal stromal tumors (GIST), as an adjuvant treatment for certain adult patients following resection of KIT+ GIST, and as a targeted therapy for Philadelphia chromosome-positive chronic myeloid leukemia (Ph+ CML). First launched in 2001, *Gleevec*/*Glivec* is available in more than 120 countries. *Gleevec*/*Glivec* is also approved in the US, EU and Japan to treat Philadelphia chromosome-positive acute lymphoblastic leukemia, a rapidly progressive form of leukemia. *Gleevec*/*Glivec* is also approved in the US and EU to treat dermatofibrosarcoma protuberans, a rare solid tumor; hypereosinophilic syndrome; myelodysplastic/myeloproliferative diseases and other rare blood disorders. In the US, *Gleevec* is also approved for aggressive systemic mastocytosis. *Gleevec*/*Glivec* has received approvals in 68 countries as a post-surgery (adjuvant setting) therapy for certain adult patients with KIT+ GIST. Following approval by the FDA in January 2013, the EMA approved *Gleevec*/*Glivec* in July 2013 for pediatric patients with newly diagnosed Ph+ acute lymphoblastic leukemia in combination with chemotherapy.
- *Sandostatin SC*/*Sandostatin LAR* (octreotide acetate/octreotide acetate for injectable suspension) is indicated for the treatment of patients with acromegaly, a chronic disease caused by over-secretion of pituitary growth hormone in adults. *Sandostatin* is also indicated for the treatment of patients with certain symptoms associated with carcinoid tumors and other types of gastrointestinal and pancreatic neuroendocrine tumors. Additionally, *Sandostatin LAR* is approved in 44 countries for the delay of tumor progression in patients with midgut carcinoid tumors. A total of 40 countries have also approved a new presentation of *Sandostatin LAR*, which includes a new diluent, safety needle and vial adapter improving the mixing and administration, with additional filings underway. *Sandostatin* was first launched in 1988 and is approved in more than 100 countries. Patent protection for the active ingredient of *Sandostatin* has expired. Generic versions of *Sandostatin* SC are available in the US and elsewhere. Patents protecting the *Sandostatin LAR* formulation, the long-acting version of *Sandostatin* which represents a majority of our *Sandostatin* sales, expire in 2014 and beyond in the US, but expired in July 2010 in key markets outside the US.
- *Afinitor*/*Votubia* (everolimus), is an oral inhibitor of the mTOR pathway. *Afinitor* is approved in more than 100 countries and regions including the US, EU member states and Japan for advanced renal cell carcinoma following vascular endothelial growth factor-targeted therapy. *Afinitor* is also approved in nearly 50 countries, including the US, EU and Japan for the treatment of advanced pancreatic neuroendocrine tumors. In addition, *Afinitor* is approved in more than 75 countries for advanced hormone receptor-positive, HER2-negative breast cancer (advanced HR+/HER2− breast cancer). Everolimus is also approved in more than 40 countries including in the US as *Afinitor* and in the EU as *Votubia* to treat patients with subependymal giant cell astrocytoma (SEGA) associated with tuberous sclerosis complex (TSC) and for the treatment of adult patients with renal angiomyolipomas and TSC who do not require immediate surgery. The dispersible formulation of the product is now approved in the TSC-SEGA population in the EU. Everolimus, the active ingredient in *Afinitor*, is also available under the trade names *Zortress*/*Certican* for use in transplantation, and is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.
- *Exjade* (deferasirox) is an oral iron chelator approved for the treatment of chronic iron overload due to blood transfusions in patients two years of age and older. Patients with congenital and acquired chronic anemia, such as thalassemia, sickle cell disease and myelodysplastic syndromes, require transfusions, which puts them at risk of iron overload. *Exjade* was first approved in 2005 and is now approved in more than 100 countries, including the US, EU member states and Japan. *Exjade* is also approved in more than 50 countries, including the US and EU member states, for the treatment of chronic iron overload in patients 10 years of age and older with non-transfusion-dependent thalassemia.

- *Tasigna* (nilotinib) is a signal transduction inhibitor of the BCR-ABL tyrosine kinase. Since its launch in 2007, *Tasigna* has been approved in more than 110 countries to treat patients with Ph+ CML in the chronic and/or accelerated phase who are resistant or intolerant to existing treatment, including *Gleevec*/*Glivec*. It is also approved in more than 85 markets, including the US, EU member states, Switzerland and Japan, to treat newly diagnosed patients in the chronic phase. Results from the global, randomized Phase III trial called ENESTnd (Evaluating Nilotinib Efficacy and Safety in Clinical Trials of Newly Diagnosed Ph+ CML Patients), a head-to-head comparison against *Gleevec*/*Glivec,* showed that *Tasigna* produced faster and deeper responses than *Gleevec*/*Glivec* in adult patients with newly diagnosed Ph+ CML. The ENESTnd five-year follow-up continued to demonstrate higher rates of early and deeper sustained molecular response, including a reduced risk of progression in patients treated with *Tasigna* compared to *Gleevec*/*Glivec*. Data also indicated a trend for higher overall survival and event-free survival in patients treated with *Tasigna* compared to *Gleevec*/*Glivec*. In addition, ENESTcmr is the first randomized trial in patients with Ph+ CML to investigate the impact of switching adult patients with residual molecular disease to *Tasigna* after a minimum of two years on treatment with *Gleevec*/*Glivec.* Three-year results from the ENESTcmr trial showed that switching to *Tasigna* led to deeper molecular responses in these patients, further reducing their disease burden.
- *Zometa* (zoledronic acid for injection/zoledronic acid 4 mg) is a leading treatment to reduce or delay skeletal-related events, including pathologic fracture, spinal cord compression, and/or requirement of radiation therapy or surgery to bone, in patients with bone metastases (cancer that has spread to the bones) from solid tumors and multiple myeloma. First approved in the US in 2001 for the treatment of hypercalcemia of malignancy (tumor-induced excessive levels of calcium), *Zometa* is approved in more than 100 countries for this indication as well as for the treatment of patients with multiple myeloma and patients with bone metastasis from solid malignancies, including prostate, breast and lung cancer. Zoledronic acid, the active ingredient in *Zometa*, is also available under the trade names *Reclast*/*Aclasta* for use in non-oncology indications. *Zometa* is facing generic competition following patent expirations in 2013 on its active ingredient, zoledronic acid, in the US and other major markets. See "—Intellectual Property" below for further information on the patent status of *Zometa*.
- *Femara* (letrozole) is a once-daily oral aromatase inhibitor for the treatment of early stage or advanced breast cancer in postmenopausal women. *Femara* was first launched in 1996 and is currently available in more than 90 countries. *Femara* is approved in the US, EU member states and other countries in the adjuvant, extended adjuvant and neoadjuvant settings for early stage breast cancer. *Femara* is also approved in the US and other countries as adjuvant therapy for locally advanced breast cancer and for advanced breast cancer following anti-estrogen therapy. *Femara* is approved as neo-adjuvant (pre-operative) therapy for early stage breast cancer in a limited number of countries. In Japan, *Femara* is approved for the treatment of all hormone receptor-positive breast cancer in postmenopausal women. *Femara* has faced generic competition since 2011 when the patent on its active ingredient, letrozole, expired in the US and major countries in Europe. See "—Intellectual Property" below for further information on the patent status of *Femara*.
- *Jakavi* (ruxolitinib) is an oral inhibitor of the JAK 1 and JAK 2 tyrosine kinases. It is the first JAK inhibitor indicated for the treatment of disease-related splenomegaly or symptoms in adult patients with primary myelofibrosis, post-polycythemia vera myelofibrosis or post-essential thromboycythemia myelfibrosis. *Jakavi* is currently approved in more than 50 countries, including the member states of the EU. In three-year follow-up data from the COMFORT-I and COMFORT-II Phase III studies in myelofibrosis, *Jakavi* treatment reduced the risk of death and resulted in sustained reductions in spleen size—a hallmark of myelofibrosis—while also improving quality of life. In three-year follow-up of the COMFORT-II study, patients treated with *Jakavi* demonstrated an overall survival advantage compared to patients receiving conventional therapy with a 52% reduction in risk of death observed in the *Jakavi* arm compared with conventional therapy. Novartis licensed ruxolitinib from Incyte Corporation for development and commercialization outside the US.

Primary Care

Primary Care Medicines

- *Diovan* (valsartan), together with *Diovan HCT*/*Co-Diovan* (valsartan and hydrochlorothiazide), is the top-selling branded anti-hypertensive medication worldwide (IMS October 2013; 59 countries audited). *Diovan* is the only agent in its class approved to treat all of the following: high blood pressure (including children 6 to 18 years), high-risk heart attack survivors and patients with heart failure. First launched in 1996, *Diovan* is available in more than 120 countries for treating high blood pressure, in more than 90 countries for heart failure, and in more than 70 countries for heart attack survivors. First launched in 1997, *Diovan HCT*/*Co-Diovan* is approved in over 100 countries worldwide. In July 2008, the FDA approved *Diovan HCT* for the first-line treatment of hypertension in patients unlikely to achieve blood pressure control on a single agent. In 2009, *Co-Diovan* was approved for treatment of high blood pressure in Japan. In September 2010, all EU member states locally approved *Diovan* for use in children aged 6 to 18 years. In 2012, the Japanese Ministry of Health, Labor and Welfare (MHLW) approved *Diovan* for the treatment of pediatric hypertension in children age 6 years or older. This approval marks the first time an angiotensin II receptor blocker (ARB) has been approved for the treatment of pediatric hypertension in children age 6 years or older in Japan. In the EU, *Diovan* and *Co-Diovan* have faced generic competition since 2011, following expiration of the patent on valsartan. In the US, the valsartan patent expired in September 2012 and *Diovan HCT* has faced generic competition since then. Generic versions of *Diovan* monotherapy have not yet launched in the US but could potentially launch at any time. Patent protection for *Diovan* expired in Japan in 2013 and will expire in 2016 for *Co-Diovan* (including patent term extensions). Patent litigations are ongoing against generic manufacturers in Europe and Asia. See "—Intellectual Property" below for further information on the patent status of *Diovan*.
- *Exforge* (valsartan and amlodipine besylate) is a single-pill combination of the ARB *Diovan* and the calcium channel blocker amlodipine besylate. First approved for the treatment of high blood pressure in Switzerland in 2006, and in the US and EU in 2007, it is now available in more than 100 countries. In 2008, the FDA approved *Exforge* for the first-line treatment of hypertension in patients likely to need multiple drugs to achieve their blood pressure goals. In January 2010, *Exforge* was approved in Japan and also launched in China. *Exforge HCT* (valsartan, amlodipine besylate and hydrochlorothiazide) is a single pill combining three widely prescribed high blood pressure treatments: an ARB (valsartan), calcium channel blocker (amlodipine) and a diuretic (hydrochlorothiazide). *Exforge HCT* was approved in the EU and the US in 2009, and is now available in more than 60 countries.
- *Galvus* (vildagliptin), an oral DPP-4 inhibitor, and *Eucreas*, a single-pill combination of vildagliptin and metformin, are indicated for the treatment of type 2 diabetes. The products were first approved in 2008. *Galvus* is currently approved in more than 100 countries, including EU member states, Japan and countries in Latin America and Asia-Pacific. *Eucreas* was the first single pill combining a DPP-4 inhibitor and metformin that was approved in Europe and is currently approved in more than 100 countries. In 2012, *Galvus* received EU approval for expanded use as a second-line monotherapy for type 2 diabetes patients who cannot take metformin. In addition, in 2012, the European Commission approved the use of *Galvus* and *Eucreas* in combination with other diabetes treatments. The first new approval was for the use of vildagliptin in combination with insulin, with or without metformin, for patients with type 2 diabetes when diet, exercise and a stable dose of insulin do not result in glycemic control. The second approval was for the use of vildagliptin in triple combination with metformin and a sulphonylurea for the treatment of type 2 diabetes when diet and exercise plus dual therapy with these two agents do not provide adequate glycemic control.

- *Xolair* (omalizumab) is the only humanized monoclonal antibody approved for the treatment of moderate to severe persistent allergic asthma in the US in adolescents (aged 12 and above) and adults. *Xolair* is approved in more than 90 countries, including the US since 2003 and the EU since 2005. It is approved for severe persistent allergic asthma in the EU in children (aged six and above), adolescents, and adults. A liquid formulation of *Xolair* in pre-filled syringes has been launched in most European countries. In Japan, *Xolair* was approved in January 2009 for the treatment of severe persistent allergic asthma in adults (aged 15 and older) and was approved in August 2013 in pediatric patients aged 6 years or older for the same indication. Novartis licensed *Xolair* from Genentech/Roche. We co-promote *Xolair* with Genentech/Roche in the US and share a portion of operating income, but we do not record any US sales. Novartis records all sales of *Xolair* outside the US. See "Item 18. Financial Statements—Note 27" for further information.
- *Arcapta Neohaler*/*Onbrez Breezhaler* (indacaterol) is a once-daily long-acting beta$_2$-adrenergic agonist (LABA) administered in a single-dose dry powder inhaler indicated for maintenance bronchodilator treatment of airflow obstruction in adult patients with chronic obstructive pulmonary disease (COPD). Once-daily *Onbrez Breezhaler* was first approved in the EU in November 2009 at two dose strengths, 150 mcg and 300 mcg. It is now approved in over 100 countries worldwide. In July 2011, the FDA approved a 75 mcg once-daily dose of indacaterol under its US trade name, *Arcapta Neohaler*, and Japanese regulatory authorities approved *Onbrez* Inhalation Capsules in a 150 mcg once-daily dose. In 2012, *Onbrez Breezhaler* 150 mcg was also approved in China. It was the first inhaled COPD product available to patients to be delivered via the low resistance *Breezhaler* inhalation device.
- *Tekturna*/*Rasilez* (aliskiren) is a treatment for high blood pressure, and the first and only approved direct renin inhibitor. *Tekturna*/*Rasilez* was approved in the US and EU in 2007, and is now approved in more than 90 countries. The product is known as *Tekturna* in the US and *Rasilez* in the rest of the world. There are various *Tekturna*/*Rasilez* single-pill combination products approved in various countries, including *Tekturna*/*Rasilez* combined with the diuretic hydrochlorothiazide, sold as *Tekturna HCT* in the US and *Rasilez HCT* in the EU, and *Tekturna*/*Rasilez* combined with the calcium channel blocker amlodipine, which is sold as *Tekamlo* in the US and *Rasilamlo* in the EU. A triple combination of these drugs is available in the US, as well, combining aliskiren, amlodipine and hydrochlorothiazide under the brand name *Amturnide*. Following the December 2011 termination of the ALTITUDE study, which was investigating *Tekturna*/*Rasilez* in a high-risk population of patients with type 2 diabetes and renal impairment, the *Tekturna*/*Rasilez* product information was updated in 2012 in the EU, US, Japan and other countries to include a contraindication against the combined use of aliskiren with an ACE inhibitor or an ARB in patients with diabetes, and a contraindication/warning against the combined use of aliskiren with an ACE inhibitor or an ARB in patients with renal impairment. In addition, in 2012, Novartis voluntarily ceased marketing *Valturna*, a single pill combination containing aliskiren and the ARB valsartan.
- *Seebri Breezhaler* (glycopyrronium bromide), a once-daily long-acting muscarinic antagonist (LAMA), received its first regulatory approvals in September 2012. *Seebri Breezhaler* 44 mcg inhalation powder, hard capsules received approval in the EU as a maintenance bronchodilator treatment to relieve symptoms for adult patients with COPD, and in Japan the MHLW approved *Seebri* (glycopyrronium) Inhalation Capsules 50 mcg administered through the *Breezhaler* device as an inhaled maintenance bronchodilator treatment for the relief of various symptoms due to airway obstructive disease in COPD (chronic bronchitis, emphysema). It is now approved in more than 50 countries worldwide. *Seebri Breezhaler* is the second inhaled COPD product available to patients to be delivered via the *Breezhaler* inhalation device. Glycopyrronium bromide was exclusively licensed to Novartis in April 2005 by Vectura and its co-development partner Sosei.

- *Ultibro Breezhaler* (indacaterol/glycopyrronium bromide) is a once-daily fixed-dose combination of the LABA indacaterol and the LAMA glycopyrronium bromide. *Ultibro Breezhaler* (indacaterol 85 mcg / glycopyrronium 43 mcg), inhalation powder, hard capsules was approved in the EU in September 2013 as a maintenance bronchodilator treatment to relieve symptoms in adult patients with COPD, and in Japan the MHLW approved *Ultibro* Inhalation Capsules (glycopyrronium 50 mcg/indacaterol 110 mcg), delivered through the *Breezhaler* inhalation device, for relief of various symptoms due to airway obstruction in COPD (chronic bronchitis, emphysema). *Ultibro Breezhaler* is the third inhaled COPD product available to patients to be delivered via the *Breezhaler* inhalation device. Glycopyrronium bromide was exclusively licensed to Novartis in April 2005 by Vectura and its co-development partner Sosei.

Established Medicines

- *Voltaren*/*Cataflam* (diclofenac sodium/potassium/resinate/free acid) is a leading non-steroidal anti-inflammatory drug (NSAID) for the relief of symptoms in rheumatic diseases such as rheumatoid arthritis and osteoarthritis, and for various other inflammatory and pain conditions. *Voltaren*/*Cataflam* was first launched in 1973 and is available in more than 140 countries. This product, which is subject to generic competition, is marketed by the Pharmaceuticals Division in a wide variety of dosage forms, including tablets, drops, suppositories, ampoules and topical therapy. In addition, in various countries, our Sandoz Division markets generic versions of the product, our Alcon Division markets *Voltaren* for ophthalmic indications, and our OTC Division markets low-dose oral forms and the topical therapy of *Voltaren* as over-the-counter products.
- *Ritalin, Ritalin LA, Focalin* and *Focalin XR* (methylphenidate HCl, methylphenidate HCl extended release, dexmethylphenidate HCl and dexmethylphenidate HCl extended release) are indicated for the treatment of attention deficit hyperactivity disorder (ADHD) in children and *Focalin XR* is additionally indicated for adults. *Ritalin* and *Ritalin LA* are also indicated for narcolepsy. *Ritalin* was first marketed during the 1950s and is available in over 70 countries. *Ritalin LA* is available in over 30 countries. *Focalin* comprises the active d-isomer of methylphenidate and therefore requires half the dose of *Ritalin*. *Focalin XR* is approved in Switzerland. *Focalin* and *Focalin XR* are available in the US. *Ritalin* immediate-release has generic competition in most countries. Some strengths of *Ritalin* and *Focalin* are subject to generic competition in the US. See "—Intellectual Property" below for further information on the patent status of these products.
- *Reclast*/*Aclasta* (zoledronic acid 5 mg) is the first and only once-yearly bisphosphonate infusion for the treatment of different forms of osteoporosis, and for the treatment of Paget's disease of the bone in men and women. Sold as *Reclast* in the US and *Aclasta* in the rest of the world, the product is approved in more than 100 countries including the US, EU member states and Canada, and is the only bisphosphonate approved to reduce the incidence of fractures at all three key fracture sites (hip, spine and non-spine) in the treatment of postmenopausal osteoporosis. The *Reclast*/*Aclasta* label was expanded in the EU and US to include the reduction in the incidence of clinical fractures after a low trauma hip fracture. The EU has also approved *Aclasta* for the treatment of osteoporosis in men at increased risk of fracture and for the treatment of osteoporosis associated with long-term systemic glucocorticoid therapy in post-menopausal women. *Reclast* is also approved in the US as a treatment to increase bone mass in men with osteoporosis, the prevention and treatment of glucocorticoid-induced osteoporosis in men and women, as well as for the prevention of osteoporosis in postmenopausal women. Zoledronic acid, the active ingredient in *Reclast*/*Aclasta*, is also approved in a number of countries in a different dosage under the trade name *Zometa* for certain oncology indications. *Reclast*/*Aclasta* is facing generic competition following patent expirations in 2013 on its active ingredient, zoledronic acid, in the US and other major markets. See "—Intellectual Property" below for further information on the patent status of *Reclast*/*Aclasta*.

Specialty Care

Ophthalmology

- *Lucentis* (ranibizumab) is a recombinant humanized high affinity antibody fragment that binds to vascular endothelial growth factors (VEGF). It is the only anti-VEGF therapy licensed in many countries for four ocular indications: wet age-related macular degeneration (wet AMD), visual impairment due to diabetic macular edema (DME), visual impairment due to macular edema secondary to retinal vein occlusion (RVO), and visual impairment due to choroidal neovascularization secondary to pathologic myopia (myopic CNV). *Lucentis* is approved in more than 100 countries to treat patients with wet AMD, for the treatment of visual impairment due to DME and macular edema secondary to RVO. Also, *Lucentis* is licensed in more than 40 countries for the treatment of visual impairment due to myopic CNV. Since its launch in 2007, there are more than 2.2 million patient-treatment years of exposure for *Lucentis.* We licensed *Lucentis* from Genentech for development and commercialization outside of the US. See "Item 18. Financial Statements—Note 27" for further information.

Neuroscience

- *Gilenya* (fingolimod) is the first oral therapy approved to treat relapsing forms of multiple sclerosis (MS) and the first in a new class of compounds called sphingosine 1-phosphate receptor modulators. In the US, *Gilenya* is indicated for relapsing forms of MS. In the EU, *Gilenya* is indicated for adult patients with highly active relapsing-remitting MS defined as either high disease activity despite treatment with beta interferon, or rapidly evolving severe relapsing-remitting MS. Experience with *Gilenya* has shown that it improves all four measures of efficacy in MS: annualized relapse rate, physical disability, MRI activity and brain volume loss. *Gilenya* is the only oral disease modifying therapy with proven superior relapse reduction against an active comparator and provides early and long-term reduction in the rate of brain volume loss. As of December 2013, more than 84,500 patients have been treated in clinical trials and in a post-marketing setting and there are currently more than 118,000 patient years of exposure. *Gilenya* is currently approved in over 75 countries around the world. *Gilenya* is licensed from Mitsubishi Tanabe Pharma Corporation.
- *Exelon* (rivastigmine tartrate) and *Exelon* Patch (rivastigmine transdermal system) are cholinesterase inhibitors indicated for the treatment of Alzheimer's disease (AD) dementia and Parkinson's disease (PD) dementia. They are the oral and transdermal formulations, respectively, of the cholinesterase inhibitor rivastigmine. *Exelon* capsules have been available since 1997 to treat mild to moderate AD dementia and are approved in more than 90 countries. In 2006, *Exelon* became the only cholinesterase inhibitor to be approved for mild to moderate PD dementia in addition to AD in both the US and EU. *Exelon* Patch was approved in 2007 in the US and EU and has been approved for the treatment of mild-to-moderate AD in more than 85 countries, including more than 20 countries where it is also approved for Parkinson's disease dementia. The once-daily *Exelon* Patch has shown comparable efficacy and superior tolerability to the highest recommended doses of *Exelon* capsules, with significant improvement in cognition and overall functioning compared to placebo. In June 2013, the FDA expanded the approved indication for *Exelon* Patch to also include the treatment of patients with severe Alzheimer's disease. In January 2013, European Marketing Authorization was obtained for the higher dose in mild-to-moderate AD. *Exelon* capsules are now subject to generic competition in several markets, including the US and the EU. See "—Intellectual Property" below for further information on the patent status of these products.
- *Comtan* (entacapone) and *Stalevo* (carbidopa, levodopa and entacapone) are indicated for the treatment of patients with Parkinson's disease who experience end of dose motor (or movement) fluctuations, known as "wearing off". *Comtan* was approved in Europe in 1998 and in the US in 1999 while *Stalevo* was approved in the US and EU in 2003. Both products are marketed in more than 50 countries by Novartis under a licensing agreement with Orion Corporation. *Stalevo* has recently been approved in China and has been submitted for approval in Japan.

Integrated Hospital Care

- *Neoral* (cyclosporine, USP Modified) is an immunosuppressant to prevent organ rejection following a kidney, liver, or heart transplant. *Neoral* is also approved for use in lung transplant in many countries outside of the US. This micro-emulsion formulation of cyclosporine is also indicated for treating selected autoimmune disorders such as psoriasis and rheumatoid arthritis. First launched in 1995, *Neoral* is marketed in more than 90 countries. This product is subject to generic competition.
- *Myfortic* (enteric-coated formulation of mycophenolate sodium) is approved in more than 90 countries for the prevention of acute rejection of kidney allografts, and is indicated in combination with cyclosporine and corticosteroids. *Myfortic* was first approved in the US in 2004 and in the EU in 2003. See "—Intellectual Property" below for further information on the patent status of *Myfortic*.
- *Zortress*/*Certican* (everolimus) is an oral inhibitor of the mTOR pathway, indicated to prevent organ rejection following solid organ transplantation. *Zortress*/*Certican* has been extensively studied as an immunosuppressant agent in solid organ transplantation with more than 10,000 transplant recipients enrolled in Novartis-sponsored clinical trials worldwide. Under the trade name *Certican*, it is approved in more than 90 countries to prevent organ rejection for renal and heart transplant patients, and in addition, in more than 50 countries worldwide to prevent organ rejection for liver transplant patients. In the US, under the trade name *Zortress*, the drug is approved for the prophylaxis of organ rejection in adult patients at low-moderate immunologic risk receiving a kidney transplant as well as for the prophylaxis of allograft rejection in adult liver transplant recipients. Everolimus is also available from Novartis in different dosage strengths and for different uses in non-transplant patient populations under the brand names *Afinitor* and *Votubia*. It is also exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.
- *Ilaris* (canakinumab) is a fully human monoclonal antibody that selectively binds and neutralizes interleukin-1β (IL-1β), a pro-inflammatory cytokine. Since 2009, *Ilaris* has been approved in over 60 countries for the treatment of children and adults suffering from cryopyrin associated periodic syndrome, a group of rare disorders characterized by chronic recurrent fever, urticaria, occasional arthritis, deafness, and potentially life-threatening amyloidosis. In 2013, *Ilaris* was approved in the EU for the treatment of acute gouty arthritis in patients who cannot be managed with standard of care, and in the US, EU and other countries for the treatment of systematic juvenile ideopathic arthritis.

Critical Care

- *TOBI Podhaler* (tobramycin inhalation powder) is an inhaled dry powder formulation of the antibiotic tobramycin, delivered using a simple and portable patient-friendly device that reduces administration time by 72% relative to *TOBI* (tobramycin nebulizer solution), with comparable efficacy and safety. *TOBI Podhaler* was approved by the US FDA in March 2013 and has been approved in the EU since July 2011. It is indicated for the management of cystic fibrosis patients aged six years and older with *Pseudomonas aeruginosa* infection in their lungs, whose lung function is within a certain range.

Compounds in Development

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

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

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

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

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

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

Selected Development Projects

Project/Product	Common name	Mechanism of action	Potential indication/ Disease area	Business franchise	Formulation/ Route of administration	Year Project Entered Current Development Phase	Planned filing dates/Current phase
ACZ885	canakinumab	Anti IL-1β monoclonal antibody	Gouty arthritis	Integrated Hospital Care	Subcutaneous injection	EU: 2013 US: 2011	EU (approved) US (Phase III)
			Hereditary periodic fevers	Integrated Hospital Care		2013	2016/III
			Secondary prevention of cardiovascular events	Critical Care		2011	2017/III
AFQ056	mavoglurant	Metabotropic glutamate receptor 5 antagonist	Fragile X syndrome	Neuroscience	Oral	2010	2015/III
AIN457	secukinumab	Anti IL-17 monoclonal antibody	Psoriasis	Integrated Hospital Care	Lyophilized powder in vial; Intravenous infusion, subcutaneous injection	2013	US/EU (registration)
			Psoriatic arthritis	Integrated Hospital Care		2011	2014/III
			Rheumatoid arthritis	Integrated Hospital Care		2011	2015/III
			Ankylosing spondylitis	Integrated Hospital Care		2011	2015/III
			Uveitis	Ophthalmology		2009	2017/II

Project/Product	Common name	Mechanism of action	Potential indication/ Disease area	Business franchise	Formulation/ Route of administration	Year Project Entered Current Development Phase	Planned filing dates/Current phase
AUY922	luminespib	ATP-competitive non-geldanamycin inhibitor of HSP90	Solid tumors	Oncology	Intravenous	2009	≥2018/II
BAF312	siponimod	Sphingosine-1-phosphate receptor modulator	Secondary progressive multiple sclerosis	Neuroscience	Tablet	2012	≥2018/III
BCT197	TBD	Anti-inflammatory agent	Chronic obstructive pulmonary disease	Primary Care	Oral	2011	≥2018/II
BGJ398	TBD	Pan-FGF receptor kinase inhibitor	Solid tumors	Oncology	Oral	2012	≥2018/II
BGS649	TBD	Aromatase inhibitor	Obese hypogonadotropic hypogonadism	Critical Care	Oral	2010	≥2018/II
BKM120	buparlisib	P13K inhibitor	Breast cancer	Oncology	Oral	2011	2015/III
			Solid tumors			2011	≥2018/I
BYL719	TBD	P13K inhibitor	Solid tumors	Oncology	Tablet	2010	≥2018/I
BYM338	bimagrumab	Inhibitor of activin receptor Type II	Sporadic inclusion body myositis	Integrated Hospital Care	Intravenous infusion	2013	2016/III
			Hip fracture			2013	≥2018/II
CAD106	TBD	Beta-amyloid-protein therapy	Alzheimer's disease	Neuroscience	Subcutaneous, intramuscular injection	2008	≥2018/II
CTL019	TBD	CD19-targeted chimeric antigen receptor T-cell immunotherapy	Leukemia	Oncology	Intravenous	2012	2016/II
DEB025	alisporivir	Cyclophilin inhibitor	Chronic hepatitis C	Integrated Hospital Care	Oral	2011	2017/II
Gilenya	fingolimod	Sphingosine-1-phosphate receptor modulator	Primary progressive multiple sclerosis	Neuroscience	Oral	2008	2015/III
			Chronic inflammatory demyelinating polyradiculoneuropathy			2012	2016/III
HSC835	TBD	Stem cell regeneration	Stem cell transplantation	Integrated Hospital Care	Infusion	2012	≥2018/II
Jakavi	ruxolitinib	Janus kinase inhibitor	Polycythemia vera	Oncology	Oral	2010	2014/III
KAE609	TBD	PfATP4 inhibitor	Malaria	Established Medicines	Oral	2012	2017/II
LBH589	panobinostat	Histone deactelylase inhibitor	Relapsed or relapsed-and-refractory multiple myeloma	Oncology	Oral	2009	2014/III
			Hematological cancers			2009	≥2018/II
LCI699	TBD	Aldosterone synthase inhibitor	Cushing's disease	Oncology	Oral	2011	2017/II
LCQ908	pradigastat	Diacylglycerol acyl transferase-1 inhibitor	Familial chylomicronemia syndrome	Critical Care	Tablet	2012	2014/III
LCZ696	TBD	Angiotensin receptor neprilysin inhibitor	Hypertension	Primary Care	Oral	2012	2014/III
			Chronic heart failure with reduced ejection fraction	Critical Care		2009	2014/III
			Chronic heart failure with preserved ejection fraction	Critical Care		2013	≥2018/II

Project/Product	Common name	Mechanism of action	Potential indication/ Disease area	Business franchise	Formulation/ Route of administration	Year Project Entered Current Development Phase	Planned filing dates/Current phase
LDE225	sonidegib	Smoothened receptor/ hedgehog signaling inhibitor	Advanced basal cell carcinoma	Oncology	Oral	2011	2014/II
			Solid tumors			2011	≥2018/I
			Medulloblastoma			2013	≥2018/III
LDK378	ceritinib	ALK inhibitor	ALK+ advanced non-small cell lung cancer (post chemotherapy and post crizotinib)	Oncology	Oral	2012	2014/II
			ALK+ advanced non-small cell lung cancer (chemotherapy naïve, crizotinib naïve)			2013	2016/III
LEE011	TBD	CDK4/6 Inhibitor	Breast cancer	Oncology	Oral	2013	2016/III
			Solid tumors			2011	≥2018/I
LFF571	TBD	Bacterial elongation factor Tu inhibitor	*Clostridium difficile* infection	Integrated Hospital Care	Oral	2010	≥2018/II
LGX818	encorafenib	RAF inhibitor	BRAF mutant melanoma	Oncology	Oral	2012	2016/III
			Solid tumors			2012	≥2018/II
LIK066	TBD	SGLT 1 / 2 inhibitor	Type 2 diabetes	Primary care	Oral	2011	≥2018/II
LJM716	TBD	HER3 inhibitor	Solid tumors	Oncology	Intravenous	2012	≥2018/I
Lucentis	ranibizumab	Anti-VEGF monoclonal antibody fragment	Choroidal neovascularization and macular edema	Ophthalmology	Intravitreal injection	2013	2016/III
MEK162	binimetinib	MEK inhibitor	NRAS mutant melanoma	Oncology	Oral	2013	2015/III
			Solid tumors			2011	≥2018/II
			Low-grade serous ovarian cancer			2013	2016/III
MEK162 + LGX818	binimetinib and encorafenib	MEK inhibitor + RAF inhibitor	BRAF mutant melanoma	Oncology	Oral	2013	2016/III
NVA237 (*Seebri*)	glycopyrronium bromide	Long-acting muscarinic antagonist	Chronic obstructive pulmonary disease	Primary Care	Inhalation	2012	EU (approved) US (2014/III)
			Asthma	Primary Care		2013	2016/III
PKC412	midostaurin	Signal transduction inhibitor	Aggressive systemic mastocytosis	Oncology	Oral	2008	2015/II
			Acute myeloid leukemia			2008	2015/III
QAW039	TBD	Anti-inflammatory agent	Asthma	Primary Care	Oral	2010	≥2018/II
QAX576	TBD	Anti-IL-13 monoclonal antibody	Allergic diseases	Primary Care / Integrated Hospital Care	Subcutaneous injection	2013	≥2018/II
QGE031	TBD	High affinity anti-IgE monoclonal antibody	Allergic diseases	Primary Care	Subcutaneous injection	2012	≥ 2018/II
QVA149 (*Ultibro*)	indacaterol and glycopyrronium bromide	Long-acting beta$_2$-adrenergic agonist and long-acting muscarinic antagonist	Chronic obstructive pulmonary disease	Primary Care	Inhalation	EU: 2013 US: 2012	EU (approved) US (2014/III)

Project/Product	Common name	Mechanism of action	Potential indication/ Disease area	Business franchise	Formulation/ Route of administration	Year Project Entered Current Development Phase	Planned filing dates/Current phase
RAD001 (*Afinitor/ Votubia)*	everolimus	mTOR inhibitor	HER2+ breast cancer, 1st line	Oncology	Tablet	2009	2014/III
			HER2+ breast cancer, 2nd/3rd line			2009	2014/III
			Tuberous sclerosis complex seizures			2013	2015/III
			Non-functioning GI and lung neuroendocrine tumors			2012	2015/III
			Diffuse large B-cell lymphoma			2009	2017/III
RLX030	serelaxin	Recombinant form of human relaxin-2 hormone	Acute heart failure	Critical Care	Intravenous infusion	EU: 2012 US: 2013	EU (registration) US (registration)
SOM230 (*Signifor LAR*)	pasireotide	Somatostatin analogue	Acromegaly	Oncology	Long-acting release: monthly intramuscular injection	2013	US/EU (registration)
			Cushing's disease			2011	2015/III
Tasigna	nilotinib	Signal transduction inhibitor	CML treatment-free remission	Oncology	Oral	2012	2016/II
Tekturna	aliskiren	Direct renin inhibitor	Reduction of CV death/ hospitalizations in chronic heart failure	Critical Care	Tablet	2009	2016/III
TKI258	dovitinib lactate	VEGFR 1-3, FGFR 1-3, PDGFR and RTK angiogenesis inhibitor	Solid tumors	Oncology	Oral	2011	2017/II
Xolair	omalizumab	Anti-IgE monoclonal antibody	Chronic idiopathic urticaria/ Chronic spontaneous urticaria	Integrated Hospital Care	Subcutaneous injection	2013	US/EU (registration)

Key Compounds in Development (select products in Phases II, III and Registration)

- ACZ885 (canakinumab) was approved in the EU in March 2013 for the treatment of acute attacks in gouty arthritis (GA) as *Ilaris*. In the US, ACZ885 was filed for the treatment of GA in February 2011, and received a Complete Response letter in August 2011 with a request by the Agency for additional clinical data to evaluate the benefit risk profile in refractory patients. We continue to work with the FDA to determine the next steps for ACZ885 in this indication. In 2013 *Ilaris* was also approved for the treatment of systemic juvenile idiopathic arthritis in the US, EU and other countries. Phase II data of ACZ885 in TNF-receptor associated periodic syndrome and Familial Mediterranean Fever showed substantial symptom relief in these two rare periodic fever syndromes. ACZ885 is also being investigated in the pivotal Phase III CANTOS study to determine whether ACZ885 can reduce the risk of recurrent cardiovascular events (cardiovascular death, non-fatal myocardial infarction, non-fatal stroke) in post-myocardial infarction patients with elevated inflammatory burden versus placebo when administered quarterly in addition to standard of care.
- AFQ056 (mavoglurant) is a metabotropic glutamate receptor 5 (mGluR5) antagonist in development for Fragile X syndrome. Phase IIb/III studies in adult and adolescent patients with Fragile X syndrome started in the fourth quarter of 2010 and the second quarter of 2011 respectively. Fragile X syndrome is the most frequent inherited form of mental retardation. AFQ056 aims to improve the associated behavioral symptoms.

- AIN457 (secukinumab) is a fully human IgG1 monoclonal antibody that selectively binds to and neutralizes interleukin 17A (IL-17A), a key pro-inflammatory cytokine. Proof of concept and Phase II studies in moderate-to-severe plaque psoriasis and arthritic conditions (psoriatic arthritis, ankylosing spondylitis and rheumatoid arthritis) have suggested that AIN457 may potentially provide a new mechanism of action for the successful treatment of immune-mediated diseases. Phase III results for AIN457 in moderate-to-severe plaque psoriasis were presented for the first time in October 2013. Results from the head-to-head Phase III FIXTURE study showed AIN457 was significantly superior to Enbrel® (etanercept), a current standard-of-care anti-TNF medication approved to treat moderate-to-severe plaque psoriasis. FIXTURE forms part of the robust AIN457 Phase III clinical trial program in moderate-to-severe plaque psoriasis that involved more than 3,300 patients in over 35 countries worldwide. Regulatory submissions for AIN457 in moderate-to-severe plaque psoriasis were completed for the US and EU in October 2013. Phase III results from two additional Phase III studies in moderate-to-severe plaque psoriasis are planned to be presented in 2014, and for arthritic conditions in 2014 and beyond.
- BAF312 (siponimod) is an oral, second-generation sphingosine 1-phosphate receptor modulator in Phase III development for secondary progressive multiple sclerosis. BAF312 binds selectively to the sphingosine 1-phosphate receptor subtypes 1 and 5, distributes effectively to the brain and has a relatively fast washout. The results from the BOLD study, an adaptive dose-ranging Phase II study, were published in Lancet Neurology 2013. These results showed that compared to placebo, BAF312 reduced brain MRI lesions by up to 80% in relapsing-remitting multiple sclerosis and relapses were infrequent and significantly reduced. BAF312 entered Phase III development in secondary progressive multiple sclerosis in 2012.
- BKM120 (buparlisib) is an oral selective pan-PI3k inhibitor. The PI3K/AKT/mTOR pathway is an important intracellular signaling network that regulates cellular metabolism, proliferation and survival. Abnormal activation of the PI3K/AKT/mTOR pathway has been identified as an important step in the initiation and maintenance of tumors and a key regulator of angiogenesis and upregulated metabolic activities in tumor cells. BKM120 has shown significant cell growth inhibition and induction of apoptosis in a variety of tumor cell lines as well as in animal models. BKM120 is currently being investigated in clinical trials in advanced solid tumors in combination with other agents, including two phase III trials in hormone receptor positive advanced breast cancer.
- BYM338 (bimagrumab) is a novel, fully human monoclonal antibody under development to treat sporadic inclusion body myositis (sIBM). In August 2013, FDA granted Breakthrough Therapy designation to BYM338 for sIBM. A Phase II/III study of bimagrumab in patients with sIBM was initiated in September 2013. BYM338 binds with high affinity to type II activin receptors, preventing natural ligands, including myostatin and activin, from binding. BYM338 stimulates muscle growth by blocking signaling from these inhibitory molecules. In addition to sIBM, BYM338 is in clinical development for multiple pathological muscle loss and weakness and muscle-wasting conditions, including recovery from hip fracture. BYM338 was developed by Novartis, in collaboration with MorphoSys.
- CTL019 is an investigational therapy that uses chimeric antigen receptors (CARs) to fight cancer. CARs are engineered proteins that transform a patient's own T cells into antigen-specific cells which seek out target proteins present on a patient's cancerous tumor. When these cells are re-introduced into the patient's blood, they demonstrate the potential to bind to the cancer cells and destroy them. CTL019 targets a protein called CD19 that is associated with a number of B-cell malignancies. On-going Phase I/II studies being conducted by the University of Pennsylvania are investigating the activity and safety of CTL019 in patients with resistant or refractory CD19+ hematologic malignancies, specifically pediatric and adult acute lymphoblastic leukemia and chronic lymphocytic leukemia.

- DEB025 (alisporivir) is an oral non-immunosuppressive cyclophilin inhibitor with potent antiviral activity. Cyclophilins are host proteins that are essential for hepatitis C virus (HCV) replication. Key attributes of alisporivir are pan-genotypic activity including unique potency against HCV Genotype 3, high barrier to resistance, in vitro synergy with several classes of Direct Acting Antivirals (DAAs), and activity against DAA-resistant variants. The program was put on partial clinical hold in 2012 due to a small number of cases of pancreatitis reported in clinical trial patients being treated with DEB025 in combination with peginterferon alpha (IFN) and ribavirin (RBV), including one fatal case. After addressing all questions from health authorities, the DEB025 clinical development has now resumed as an IFN-free program in the US and outside the US. In these Phase II clinical trials we are investigating treatment with DEB025 plus RBV alone and in combination with DAAs. These interferon-free regimens focus initially on patients with HCV Genotype 3, who are believed to have the greatest unmet medical need.
- *Gilenya* (fingolimod) is a sphingosine 1-phosphate receptor modulator approved for the treatment for relapsing forms of MS. INFORMS, a Phase III study of *Gilenya* in primary progressive MS is ongoing and a submission for this indication to health authorities is anticipated in 2015. A Phase III study of *Gilenya* in patients with chronic inflammatory demyelinating polyradiculoneuropathy was initiated in 2012. Submissions to health authorities in this indication are anticipated to be made in 2016.
- *Jakavi* (ruxolitinib) is an oral inhibitor of the JAK 1 and JAK 2 tyrosine kinases in development for use in patients with polycythemia vera. The pivotal Phase III RESPONSE study of ruxolitinib in patients with polycythemia vera who are resistant to or intolerant of hydroxyurea is fully enrolled. This trial is managed by Incyte in the US and by Novartis outside the US. Data are expected to be presented at medical congresses and filed with health authorities in 2014.
- LBH589 (panobinostat) is a highly potent pan deacetylase inhibitor targeting the epigenetic regulation of multiple oncogenic pathways, with development focused on hematological diseases. The Phase III trial of LBH589, in combination with bortezomib and dexamethasone, met the primary endpoint of significantly extending progression-free survival in patients with relapsed or relapsed and refractory multiple myeloma when compared to bortezomib plus dexamethasone alone. We anticipate that full results will be presented and discussed with regulatory authorities worldwide in 2014.
- LCQ908 (pradigastat) is a diacylglycerol acyltransferase-1 (DGAT-1) inhibitor. DGAT-1 catalyzes the final committed step in triglyceride synthesis and is believed to play a key role in whole body energy homeostasis. Inhibition of DGAT-1 represents a novel approach to treat metabolic disease and LCQ908 is currently in Phase III development for the treatment of an orphan disease called familial chylomicronemia syndrome.
- LCZ696 is a first-in-class angiotensin receptor neprilysin inhibitor in development for the treatment of chronic heart failure and hypertension. LCZ696 simultaneously inhibits neprilysin and the renin angiotensin aldosterone system. One large, global Phase III study (PARADIGM-HF) is underway to assess the efficacy and safety of LCZ696 in chronic heart failure with reduced ejection fraction. PARADIGM-HF enrollment was completed in November 2012. Results from the Phase II PARAMOUNT study, which were reported in 2012, showed that LCZ696 is the first therapy to demonstrate efficacy based on biomarkers, and reduce left atrial size, in patients with heart failure with preserved ejection fraction. In 2012, LCZ696 entered Phase III development for the treatment of hypertension. All Phase III trials required for filing were completed in 2013, including the pivotal Phase III A1306 study designed to assess the efficacy and safety of LCZ696 versus the angiotensin receptor blocker olmesartan in patients with systolic hypertension. The completed Phase III trials demonstrated the efficacy and safety of LCZ696 in reducing blood pressure and will be submitted for peer review publication in 2014. In addition, we anticipate that the first worldwide filing for hypertension will be made in Japan in 2014.

- LDE225 (sonidegib) is a selective smoothened inhibitor in clinical development for various cancers. LDE225 binds to smoothened receptor inhibitors and prevents abnormal activation of the Hedgehog pathway, which is associated with uncontrolled cellular growth and proliferation. LDE225 is currently in development for advanced basal cell carcinoma and medulloblastoma and in multiple hematologic and solid tumor trials.
- LDK378 (ceritinib) is a potent and highly selective oral anaplastic lymphoma kinase (ALK) inhibitor that is in development for anaplastic lymphoma kinase positive (ALK+) cancers. Early clinical studies of LDK378 showed a preliminary clinical response in ALK+ non-small lung cancer (NSCLC), including patients previously treated with crizotinib as well as crizotinib-naïve patients. In 2013, LDK378 received Breakthrough Therapy designation from the FDA for the treatment of patients with ALK+ metastatic NSCLC who had progressed during treatment with, or were intolerant to, crizotinib. In early 2014, we expect to file an application with the FDA for approval of LDK378 in this patient population based on the early clinical studies. A Phase III study in this population is also ongoing with an anticipated filing date of 2015. Additionally, Phase III studies to explore the role of LDK378 in patients who have not previously been treated with crizotinib are currently underway.
- LEE011 is an orally bioavailable, highly selective small molecule inhibitor of cyclin dependent kinase (CDK) 4 and 6. LEE011 may be able to stop the proliferation of growth factors in tumors where the CDK4/6 pathway has been activated and unchecked cell proliferation has occurred. The compound is in a Phase III registration study in combination with letrozole in metastatic breast cancer. LEE011 is also in Phase I and II investigation, with a number of ongoing studies in adult and pediatric solid tumors.
- *Lucentis* (ranibizumab) is an anti-VEGF monoclonal antibody fragment in Phase III development for the treatment of visual impairment due to choroidal neovascularization and macular edema secondary to conditions other than age-related macular degeneration, diabetic macular edema, retinal vein occlusion and pathologic myopia. Filings are expected in 2016.
- NVA237 (glycopyrronium bromide) is an inhaled LAMA undergoing clinical trials in asthma. A regulatory filing in the US for a COPD indication is expected in the fourth quarter of 2014.
- PKC412 (midostaurin) is an oral, multi-targeted, kinase inhibitor in Phase III development for treatment of patients with FLT-3 mutated acute myeloid leukemia (AML) and in Phase II development for aggressive systemic mastocytosis (ASM). Filings are expected for newly diagnosed, FLT3-mutated AML and for ASM by 2015.
- QGE031 is an investigational humanized anti-Immunoglobulin E (IgE) monoclonal antibody in development for the treatment of IgE-driven allergic diseases. QGE031 is licensed worldwide to Novartis by Genentech/Roche. Phase II ascending dose studies investigating the pharmacokinetics, pharmacodynamics and tolerability of QGE031 administered intravenously and subcutaneously have been completed.
- QVA149 (indacaterol/glycopyrronium bromide) is a fixed-dose combination of the inhaled LABA indacaterol and the LAMA glycopyrronium bromide. A regulatory filing for a COPD indication is expected in the US in the fourth quarter of 2014.
- RAD001 (*Afinitor*/*Votubia*, everolimus) is an oral inhibitor of the mTOR pathway. Phase III studies are underway in patients with advanced breast cancer, lymphoma and non-functioning GI/Lung, NET. The EXIST-3 (EXamining everolimus In a Study of TSC) clinical trial is underway to examine the efficacy and safety of everolimus in patients with TSC who have refractory partial-onset seizures (uncontrollable seizures localized to a specific area of the brain). Also in 2013, results from the Phase III EVOLVE study showed that everolimus did not extend overall survival compared to placebo in patients with locally advanced or metastatic hepatocellular carcinoma after progression on or intolerance to sorafenib. No further studies are planned in this indication.

- RLX030 (serelaxin), the first in a new class of medicines, is a recombinant form of the human hormone relaxin-2, and is believed to act through multiple mechanisms on the heart, kidneys and blood vessels. Results from the Phase III RELAX-AHF study show that RLX030 improved symptoms and reduced mortality in patients with acute heart failure (AHF). Data from the study were presented at the American Heart Association congress in November 2012 and published simultaneously in *The Lancet* showing that RLX030 significantly reduced dyspnea (or shortness of breath), the most common symptom of AHF, which was the primary objective of the study based on pre-specified protocol criteria. In addition, RLX030 was associated with reductions in worsening of heart failure and all-cause mortality (a safety endpoint) and in deaths due to cardiovascular causes (an additional pre-specified exploratory endpoint) at the end of six months. Based on the findings of the RELAX-AHF study, we submitted to the EU in December 2012 and the US in May 2013. In June 2013, RLX030 received Breakthrough Therapy designation from the FDA for AHF. In September 2013, a second phase III study, RELAX-AHF-2, began enrolling patients. The goal of this study is to replicate the key findings of RELAX-AHF, and it will assess cardiovascular mortality as the primary endpoint. In January 2014, we announced that we would submit a revised filing package, including new data analyses, for re-examination for conditional approval of RLX030 in AHF by the CHMP following the issuance of a negative opinion on approval. We anticipate that a revised opinion could be granted in the second quarter of 2014.
- SOM230 (*Signifor LAR,* pasireotide) is a somatostatin analogue in development as a long-acting release formulation for patients with acromegaly, a chronic hormonal disorder that occurs when excess growth hormone is produced. In the third quarter of 2013, the first interpretable results of the Phase III PAOLA study showed that a significantly greater proportion of patients with inadequately controlled acromegaly treated with the long-acting release form of SOM230 saw a reduction of two key hormone levels used to measure disease at 24 weeks versus continued treatment with the long acting release form of octreotide, or lanreotide Autogel, meeting the primary endpoint. Regulatory action is anticipated in 2014 based on submissions that will include the results of this study and the results of a pivotal study in acromegaly patients without prior medical therapy that was published earlier. A Phase III study of SOM230 is also underway in patients with Cushing's disease.
- *Tasigna* (nilotinib) is a signal transduction inhibitor of the BCR-ABL tyrosine kinase. Novartis has initiated a global clinical trial program to evaluate the potential for PH+ CML patients to maintain deep molecular response after stopping nilotinib, including four company-sponsored studies and four investigator-initiated studies. This research is underway in more than 100 trial sites in 40 countries. In 2013, clinical data in metastatic melanoma with c-KIT mutation did not demonstrate clinical benefit when compared with the standard of care. No further studies are planned in this indication.
- TKI258 (dovitinib) is a multi-targeted kinase inhibitor of FGFR, VEGFR and PDGFR. Results of a Phase III trial evaluating TKI258 in renal cell carcinoma showed the drug did not meet its primary endpoint of superior progression-free survival compared to sorafenib in patients with metastatic renal cell carcinoma after failure with prior therapies. The development of TKI258 continues with ongoing clinical studies for solid tumors.
- *Xolair* (omalizumab) is a humanized monoclonal antibody approved for the treatment of persistent allergic asthma. Novartis and Genentech/Roche commenced development of omalizumab in a new indication, chronic spontaneous urticaria (CSU). CSU is also known as chronic idiopathic urticaria (CIU) in the US, and is a persistent, debilitating form of hives and chronic itch with limited approved treatment options. Phase III studies began in 2011 and results from the three pivotal registration studies involving nearly 1,000 patients were presented in 2013. Regulatory submissions for this indication were completed in the EU, US and Switzerland in the third quarter of 2013. In January 2014, the CHMP granted a positive opinion for the use of *Xolair* as an add-on therapy for CSU in adult and adolescent patients 12 years and older with inadequate response to H1 antihistamines. The opinion was based on positive results from the three pivotal registration studies.

Projects Added To And Subtracted From The Development Table Since 2012

Project/Product	Potential indication/ Disease area	Change	Reason
ACZ885	Systemic juvenile idiopathic arthritis	Commercialized	Received marketing approval in EU and US
	Diabetes mellitus	Terminated	Phase II results suggest there is unlikely to be a clinical benefit
	Hereditary periodic fevers	Added	Entered confirmatory development
AFQ056	L-dopa induced dyskinesia in Parkinson's disease	Terminated	Clinical results did not show sufficient therapeutic benefit over standard of care
AIN457	Uveitis	Added	Entered confirmatory development
	Multiple sclerosis	Terminated	Discontinued development in multiple sclerosis
ATI355	Spinal cord injury	Removed from table	Project is in exploratory development
BAF312	Multiple sclerosis	Now disclosed as secondary progressive multiple sclerosis	
BEZ235	Solid tumors	Terminated	Discontinued development in oncology indications
BGJ398	Solid tumors	Added	Entered confirmatory development
BYM338	Hip fracture	Added	Entered confirmatory development
Exjade	Non-transfusion dependent thalassemia	Commercialized	Received marketing approval in EU and US
Gilenya	Primary progressive multiple sclerosis	Added	Specific indication for primary progressive multiple sclerosis defined in 2013

Project/Product	Potential indication/ Disease area	Change	Reason
HSC835	Stem cell transplantation	Added	Entered confirmatory development
LCZ696	Chronic heart failure	Split indication	Indication now specified as chronic heart failure with reduced ejection fraction and chronic heart failure with preserved ejection fraction
LDE225	Medulloblastoma	Added	Entered confirmatory development
LDK378	Non-small cell lung cancer	Now disclosed as ALK+ advanced non-small cell lung cancer (post chemotherapy and post crizotinib) and ALK+ advanced non-small cell lung cancer (chemotherapy naïve, crizotinib naïve)	
LGX818	Melanoma	Now disclosed as BRAF mutant melanoma	
	Solid tumors	Added	Entered confirmatory development
LEE011	Breast cancer	Added	Entered confirmatory development
	Solid tumors	Added	Entered confirmatory development
LJM716	Solid tumors	Added	Entered confirmatory development
Lucentis	Choroidal neovascularization secondary to pathological myopia	Commercialized	Received marketing approval in EU

Project/Product	Potential indication/ Disease area	Change	Reason
MEK162	Melanoma	Now disclosed as NRAS mutant melanoma	
	Solid tumors	Added	Entered confirmatory development
	Low-grade serous ovarian cancer	Added	Entered confirmatory development
MEK162 + LGX818	BRAF mutant melanoma	Added	Entered confirmatory development
NVA237 (*Seebri*)	Asthma	Added	Entered confirmatory development
QAX576	Allergic diseases	Added	Entered confirmatory development
QMF149	Chronic obstructive pulmonary disease	Terminated	Discontinued for business reasons
	Asthma	Terminated	Discontinued for business reasons
RAD001 (*Afinitor/Votubia*)	Breast cancer HER2-over-expressing, 1st line	Now disclosed as HER2+ breast cancer, 1st line	
	Breast cancer HER2-over-expressing 2nd/3rd line	Now disclosed as HER2+ breast cancer, 2nd/3rd line	
	Hepatocellular carcinoma	Terminated	Did not meet endpoint
	Tuberous sclerosis complex seizures	Added	Entered confirmatory development
Tasigna	Metastatic melanoma with c-KIT mutation	Terminated	Did not demonstrate clinical benefit against standard of care
	CML treatment-free remission	Added	Entered confirmatory studies
TKI258	Renal cell carcinoma	Terminated	Trial did not meet primary endpoint
TOBI Podhaler	*Pseudomonas aeruginosa* infection in cystic fibrosis patients	Commercialized	Received marketing approval in EU and US

Project/Product	Potential indication/ Disease area	Change	Reason
Zortress/Certican	Prevention of organ rejection—liver	Commercialized	Received marketing approval in EU and US

Principal Markets

The Pharmaceuticals Division sells products in approximately 155 countries worldwide, but net sales are generally concentrated in the US, Europe and Japan, which together accounted for 76% of the division's 2013 net sales. At the same time, sales from expanding "emerging growth markets" have become increasingly important to us. See "Item 5. Operating and Financial Review and Prospects—5.A Operating Results—Factors Affecting Results of Operations—Fundamental Drivers Remain Strong—Growth of Emerging Markets." The following table sets forth the aggregate 2013 net sales of the Pharmaceuticals Division by region:

	2013 Net sales to third parties	
Pharmaceuticals		
	$ millions	**%**
United States	10,256	32
Americas (except the United States)	3,018	9
Europe	10,993	34
Rest of the World	7,947	25
Total	**32,214**	**100**

	$ millions	**%**
Established Markets*	24,493	76
Emerging Growth Markets*	7,721	24
Total	**32,214**	**100**

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

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

Production

The primary goal of our manufacturing and supply chain management program is to ensure the uninterrupted, timely and cost-effective supply of products that meet all product specifications. We manufacture our products at five bulk chemical and 15 pharmaceutical production facilities as well as three biotechnology sites. Bulk chemical production involves the manufacture of therapeutically active compounds, mainly by chemical synthesis or by biological processes such as fermentation. Pharmaceutical production involves the manufacture of "galenical" forms of pharmaceutical products such as tablets, capsules, liquids, ampoules, vials and creams. Major bulk chemical sites are located in Schweizerhalle, Switzerland; Grimsby, UK; Ringaskiddy, Ireland and Changshu, China. Significant pharmaceutical

production facilities are located in Stein, Switzerland; Wehr, Germany; Singapore; Torre, Italy; Barbera, Spain; Suffern, New York; Sasayama, Japan and in various other locations. We have biotechnology plants located in Huningue, France; Basel, Switzerland and Vacaville, California. A fourth biotechnology plant is under development in Morris Plains, New Jersey to manufacture personalized medicine. In January 2014, we announced the closing of the production facility located in Suffern, New York.

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

Raw materials for the manufacturing process are either produced in-house or purchased from a number of third party suppliers. Where possible, our policy is to maintain multiple supply sources so that the business is not dependent on a single or limited number of suppliers. However, our ability to do so may at times be limited by regulatory or other requirements. We monitor market developments that could have an adverse effect on the supply of essential materials. Our suppliers of raw materials are required to comply with Novartis quality standards.

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

Marketing and Sales

The Pharmaceuticals Division serves customers with 2,439 field force representatives in the US, and an additional 21,129 in the rest of the world, as of December 31, 2013, including supervisors and administrative personnel. These trained representatives, where permitted by law, present the therapeutic risks and benefits of our products to physicians, pharmacists, hospitals, insurance groups and managed care organizations. We are seeing the increasing influence of customer groups beyond the prescribers, and Novartis is responding by adapting our business practices.

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

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

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

Competition

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

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

Research and Development

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

	2013		2012		2011	
	$ millions	Core R&D[1] $ millions	$ millions	Core R&D[1] $ millions	$ millions	Core R&D[1] $ millions
Research and Exploratory Development . .	2,664	2,611	2,584	2,530	2,676	2,625
Confirmatory Development . .	4,578	4,550	4,334	4,167	4,556	4,235
Total	**7,242**	**7,161**	**6,918**	**6,697**	**7,232**	**6,860**

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

Our Pharmaceuticals Division expensed $7.2 billion (on a core basis $7.2 billion) in research and development in 2013. This represented 22% (on a core basis 22%) of the division's total net sales.

Research and Exploratory Development expenditure was $2.7 billion in 2013, practically unchanged from the Research and Exploratory Development expenditure of $2.6 billion in 2012 and the 2011 amount of $2.7 billion.

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

Confirmatory Development expenditures in 2012 decreased by 5% to $4.3 billion as compared against 2011. This included $0.1 billion in impairments of intangible assets in 2012 (2011: $0.3 billion). On a core basis, Confirmatory Development expenditure in 2012 remained essentially unchanged against 2011, at $4.2 billion, and represented 13% of Pharmaceuticals Division net sales as in the prior year.

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

We manage our research and development expenditures across our entire portfolio in accordance with our strategic priorities. We make decisions about whether or not to proceed with development projects on a project-by-project basis. These decisions are based on the project's potential to meet a

significant unmet medical need or to improve patient outcomes, the strength of the science underlying the project, and the potential of the project (subject to the risks inherent in pharmaceutical development) to generate significant positive financial results for the Company. Once a management decision has been made to proceed with the development of a particular molecule, the level of research and development investment required will be driven by many factors, including the medical indications for which it is being developed, the number of indications being pursued, whether the molecule is of a chemical or biological nature, the stage of development, and the level of evidence necessary to demonstrate clinical efficacy and safety.

Research program

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

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

In 2003, we established the Novartis Institutes for BioMedical Research (NIBR). At NIBR's headquarters in Cambridge, Massachusetts, more than 1,600 scientists and associates conduct research into disease areas such as cardiovascular and metabolism disease, neurodegenerative diseases, oncology, muscle disorders and ophthalmology. An additional 5,000 scientists and technology experts conduct research in Switzerland, UK, Italy, Singapore, China and three other US sites. Research is conducted at these sites in the areas of neuroscience, autoimmune disease, oncology, cardiovascular disease, gastrointestinal disease and respiratory disease. Research platforms such as the Center for Proteomic Chemistry are headquartered in the NIBR site in Basel, Switzerland. In addition, The Novartis Institute for Tropical Diseases, Novartis Vaccines for Global Health, the Friedrich Miescher Institute, and the Genomics Institute of the Novartis Research Foundation, focus on basic genetic and genomic research as well as research into diseases of the developing world such as malaria, dengue and typhoid fever.

In August 2012, Novartis and the University of Pennsylvania (Penn) announced an exclusive global research and development collaboration to develop and commercialize targeted chimeric antigen receptor (CAR) immunotherapies for the treatment of cancers. The research component of this collaboration focuses on accelerating the discovery and development of additional therapies using CAR immunotherapy. In addition, NIBR and Penn will build the Center for Advanced Cellular Therapies at Penn (CACT) on the Penn campus in Philadelphia. The CACT is planned to be a first of its kind research and development center established specifically to develop and manufacture adoptive T cell immunotherapies under the research collaboration guided by scientists and clinicians from NIBR and Penn. Construction of the CACT is expected to be completed in 2015.

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

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

In November 2013, we took action to co-locate scientific resources in order to improve the efficiency and effectiveness of our global research organization. We announced that we will establish a respiratory research group at our site in Cambridge, Massachusetts, and a proposal to close the Horsham, UK research site, as well as a plan to exit research in topical applications for dermatology and exit from the Vienna, Austria research site. These proposals are subject to consultation with local works councils in the UK and Austria. In addition we announced the consolidation of US-based oncology research from Emeryville, California to Cambridge, Massachusetts and the closing of the biotherapeutics development unit in La Jolla, California. If the proposals in the UK and Austria are confirmed, approximately 500 associates will be impacted globally. The final number is subject to employee consultation processes in the UK and Austria. One hundred seventy-five new positions will be opened in Cambridge to support oncology research and the new respiratory research group. The net impact of these and other changes is therefore expected to be approximately 325 positions.

Development program

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

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

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

Genoptix Medical Laboratory

Genoptix Medical Laboratory is a part of our Pharmaceuticals Division and provides comprehensive diagnostic laboratory services to community-based hematologists and oncologists, and to hospitals throughout the US. Genoptix focuses its testing primarily on cancers of the blood and bone marrow, such as leukemia, as well as other solid tumor cancers.

Recent advances in biology and bioinformatics have led to a much deeper understanding of the genetic underpinnings of disease and drug targets, and Genoptix is working to make use of these scientific advances. Using cutting-edge technologies such as Next Generation Sequencing, Genoptix has developed a robust and expanding portfolio of molecular diagnostic programs that complement our pharmaceutical

products. It is our goal to bring a number of new products to the market over the next few years, focusing on the combination of diagnostics and pharmaceuticals.

In addition, as the number of our compounds in development increases, streamlined and centralized management of our assays is vital to the success of our development activities. As a result, we have expanded our Clinical Trial Assay (CTA) capabilities through the creation of the CTA Center of Excellence within Genoptix. This expansion seeks to take advantage of the existing internal capability of Genoptix, and to expand the business potential of Genoptix as an end-to-end solution for the management of CTAs across programs. In addition, we have formed a new sales team within Genoptix which focuses its efforts on selling molecular tests for monitoring treatment of patients with chronic myeloid leukemia.

Alliances and acquisitions

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

Regulation

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

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

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

The registration process generally takes between six months and several years, depending on the country, the quality of the data submitted, the efficiency of the registration authority's procedures and the nature of the product. Many countries provide for accelerated processing of registration applications for

innovative products of particular therapeutic interest. In recent years, intensive efforts have been made among the US, the EU and Japan to harmonize registration requirements in order to achieve shorter development and registration times for medical products. However, the requirement in many countries to negotiate selling prices or reimbursement levels with government regulators can substantially extend the time until a product may finally be launched to the market.

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

United States

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

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

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

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

European Union

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

Under the Centralized Procedure, applications are made to the EMA for an authorization which is valid for the European Community. The Centralized Procedure is mandatory for all biotechnology products and for new chemical entities in cancer, neurodegenerative disorders, diabetes and AIDS, autoimmune diseases or other immune dysfunctions and optional for other new chemical entities or innovative medicinal products or in the interest of public health. When a pharmaceutical company has gathered data which it believes sufficiently demonstrates a drug's quality, safety and efficacy, then the

company may submit an application to the EMA. The EMA then receives and validates the application, and appoints a Rapporteur and Co-Rapporteur to review it. The entire review cycle must be completed within 210 days, although there is a "clock stop" at day 120, to allow the company to respond to questions set forth in the Rapporteur and Co-Rapporteur's Assessment Report. When the company's complete response is received by the EMA, the clock restarts on day 121. If there are further aspects of the dossier requiring clarification, the EMA will then request an Oral Explanation on day 180, in which the sponsor must appear before the CHMP to provide the requested additional information. On day 210, the CHMP will then take a vote to recommend the approval or non-approval of the application. The final decision under this Centralized Procedure is an EU Community decision which is applicable to all Member States. This decision occurs on average 60 days after a positive CHMP recommendation.

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

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

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

Japan

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

Once the MHLW has approved the application, the company can make the new drug available for physicians to prescribe. After that, the MHLW lists its national health insurance price within 60 days (or 90 days) from the approval, and physicians can obtain reimbursement. For some medications, the MHLW requires additional post-approval studies (Phase IV) to evaluate safety, effects and/or to gather information on the use of the product under special conditions. The MHLW also requires the drug's

sponsor to submit periodic safety update reports. Within three months from the specified re-examination period, which is designated at the time of the approval of the application for the new product, the company must submit a re-examination application to enable the drug's safety and efficacy to be reassessed against approved labeling by the PMDA.

Price Controls

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

- Direct efforts to control prices.
  - *United States.* In the US, as a result of the Patient Protection and Affordable Care Act (ACA) and the recurring focus on deficit reduction, there is a significant risk of continued actions to control prices. Specifically, one proposal that has been repeatedly advanced would impose a government-mandated pricing formula on both patented and generic medications provided through the Medicare prescription drug benefit (Medicare Part D). In addition, the ACA mandated the creation of a new entity, the Independent Payment Advisory Board, which has been granted unprecedented authority to implement broad actions to reduce future costs of the Medicare program. This could include required prescription drug discounts or rebates, which could limit net prices for our products. There is a risk that government officials will continue to search for ways to reduce or control prices.
  - *Europe.* In Europe, our operations are subject to significant price and marketing regulations. Many governments are introducing healthcare reforms in a further attempt to curb increasing healthcare costs. In the EU, governments influence the price of pharmaceutical products through their control of national healthcare systems that fund a large part of the cost of such products to consumers. The downward pressure on healthcare costs in general in the EU, particularly with regard to prescription drugs, has become very intense. Increasingly high barriers are being erected against the entry of new products, and payors are limiting access to innovative medicines based on cost-benefit analyses. In addition, prices for marketed products are referenced within Member States and across Member State borders, including new EU Member States.
  - *Japan.* In Japan, the government generally introduces price cuts every other year, and the government additionally mandates price decreases for specific products. In 2013, the National Health Insurance price calculation method for new products and the price revision rule for existing products are being reviewed, and the resulting new drug tariffs will be effective beginning April 2014. The Japanese government is currently undertaking a healthcare reform initiative with a goal of sustaining the universal coverage of the National Health Insurance program, and is addressing the efficient use of drugs, including promotion of generic use. Meanwhile, the government tentatively initiated a premium system which basically maintains the price of patented drugs for unmet medical needs in order to promote innovative new drug creation and the solution of the unapproved indication issue. The continuance of this system will be reviewed as a part of price reforms in 2014.
  - *Rest of World.* Many other countries around the world are also taking steps to rein in prescription drug prices. As an example, China, one of our most important emerging growth markets, has ordered price cuts on drugs four times since 2011, including 2013 price cuts of up to 20%.

- Regulations favoring generics. In response to rising healthcare costs, many governments and private medical care providers, such as Health Maintenance Organizations, have instituted reimbursement schemes that favor the substitution of generic pharmaceuticals for more expensive brand-name pharmaceuticals. In the US, generic substitution statutes have been enacted by virtually all states and permit or require the dispensing pharmacist to substitute a less expensive generic drug instead of an original patented drug. Other countries have similar laws, including numerous European countries. We expect that the pressure for generic substitution will continue to increase.
- Cross-Border Sales. Price controls in one country can also have an impact in other countries as a result of cross-border sales. In the EU, products which we have sold to customers in countries with stringent price controls can in some instances legally be re-sold to customers in other EU countries with less stringent price controls at a lower price than the price at which the product is otherwise available in the importing country. In North America, products which we have sold to customers in Canada, which has relatively stringent price controls, are sometimes re-sold into the US, again at a lower price than the price at which the product is otherwise sold in the US. Such imports from Canada and other countries into the US are currently illegal.

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

Intellectual Property

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

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

United States

Patents. In the US, a patent issued for an application filed today will receive a term of 20 years from the application filing date, subject to potential adjustments for Patent Office delay. A US pharmaceutical patent which claims a product, method of treatment using a product, or method of manufacturing a product, may be eligible for an extension of the patent term based on the time the FDA took to approve the product. This type of extension may only extend the patent term for a maximum of 5 years, and may

not extend the patent term beyond 14 years from regulatory approval. Only one patent may be extended for any product based on FDA delay.

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

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

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

European Community

Patents. Patent applications in Europe may be filed in the European Patent Office (EPO) or in a particular country in Europe. The EPO system permits a single application to be granted for the whole of the EU, plus other non-EU countries, such as Switzerland and Turkey. A patent granted by the EPO or a European country office will expire no later than 21 years from the earliest patent application on which the patent is based. Pharmaceutical patents can also be granted a further period of exclusivity under the Supplementary Protection Certificate (SPC) system. SPCs are designed to compensate the owner of the patent for the time it took to receive marketing authorization by the European Health Authorities. An SPC may be granted to provide, in combination with the patent, up to 15 years of exclusivity from the date of the first European marketing authorization. But the SPC cannot last longer than 5 years. The SPC duration can additionally be extended by a further 6 months if the product is the subject of an agreed pediatric investigation plan. The post-grant phase of patents, including the SPC system, is currently administered on a country-by-country basis under national laws which, while differing, are intended to, but do not always, have the same effect.

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

at the date of approval, will have a patent lifetime of 10 to 15 years, including all extensions available at that time.

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

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

Japan

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

The following is a summary of the patent expiration dates for certain key products of our Pharmaceuticals Division:

Oncology

- *Gleevec*/*Glivec.* We have patent protection on imatinib, the active ingredient used in our leading product *Gleevec*/*Glivec*, until July 2015 in the US (including pediatric extension), until 2016 in the major European countries and until September 2014 for the main indications in Japan. Additional patents were granted in more than 40 countries, including the US, Japan, France, Germany, UK, Italy and Spain, claiming innovative features of *Gleevec*/*Glivec*, including crystal form (expiry 2018), tablet formulation (expiry 2023) and process (expiry 2023). Patent protection on the crystal form of imatinib has been challenged in the US, but no challenge has been made to the compound patent in the US. *Gleevec*/*Glivec* currently faces generic competition in a number of countries including Brazil, Canada, China, India, Russia, Turkey and for a minor indication in Japan. Litigation is on-going in Canada, Portugal, UK, South Korea and Mexico.
- *Sandostatin.* Patent protection for the active ingredient of *Sandostatin* has expired. Generic versions of *Sandostatin SC* are available in the US and elsewhere. Patents protecting the *Sandostatin LAR* formulation, the long-acting version of *Sandostatin* which represents a majority of our *Sandostatin* sales, expire in 2014 and beyond in the US, but expired in July 2010 in key markets outside the US.

- *Afinitor*/*Votubia* and *Zortress*/*Certican.* Patent protection for everolimus, the active ingredient in these products, and licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents, is expected to expire in 2020 in the US and in 2018-2019 in Europe and other major countries.
- *Exjade.* Patent protection for the active ingredient in *Exjade* will expire in 2019 in the US and in 2021 in other markets. In the US and Canada, generic companies have challenged the compound patent. In the US, an automatic stay preventing the FDA from approving a generic version of *Exjade* will expire in August 2014. Novartis has begun patent litigation against this generic company in the US, with a trial scheduled for January 2014. It is possible that the generic company may launch its generic version of *Exjade* after the automatic stay expires, or if we lose our patent litigation suit against it.
- *Tasigna.* Patent protection for the active ingredient in *Tasigna* will expire in 2023 in the US and other major markets.
- *Zometa* and *Reclast*/*Aclasta.* Patent protection on zoledronic acid, the active ingredient in these products, expired in 2012 in a limited number of smaller markets, and in 2013 in the US and in other major markets. In the US, generic versions of *Zometa* and *Reclast* are available. In Europe, generic versions of *Zometa* are launched and generic *Aclasta* is available in some countries. Additional patents claiming certain innovative forms or uses of these products, in particular *Reclast*/*Aclasta*, have been granted in some countries including the US and Europe. Patent litigations are ongoing in the US, Europe and elsewhere.
- *Femara.* Patent protection for the active ingredient in *Femara* expired in the US, in major European markets, and in Japan. Data exclusivity in Japan expires in 2014. Generic versions of *Femara* are available now in all major markets with the exception of Japan.
- *Jakavi.* Basic compound patent protection (including SPC) for ruxolitinib, the active ingredient in *Jakavi*, expires in 2027 in Europe. Novartis licensed ruxolitinib from Incyte Corporation for development and commercialization outside the US.

Primary Care

Primary Care Medicines

- *Diovan*/*Co-Diovan*/*Diovan HCT.* Patent protection on valsartan, the active ingredient used in our long-time best-selling products *Diovan* and *Co-Diovan*/*Diovan HCT*, expired in the major countries of Europe in 2011 and in September 2012 in the US. As a result, *Diovan* and *Co-Diovan*/*Diovan HCT* face generic competition in those countries. With respect to the US, generic versions of *Diovan HCT* launched in 2012. Generic versions of *Diovan* monotherapy have not yet launched in the US but could potentially launch at any time. Patent protection expired in Japan in 2013 for *Diovan* and will expire in 2016 for *Co-Diovan* (including patent term extensions). Patent litigations are ongoing against generic manufacturers in Europe and Asia.
- *Exforge*/*Exforge HCT. Exforge* is a single-pill combination of amlodipine besylate and valsartan. *Exforge HCT* is the single-pill combination that also includes hydrochlorothiazide. The valsartan patents expired in many countries in 2011 and 2012 (see above), and will expire in 2015 in Japan, as a result of an extension granted in Japan for the *Exforge* product only. The patent on amlodipine besylate has expired. The patent covering the *Exforge* product (the combination of amlodipine besylate and valsartan) will expire in 2019 in the US and 2021 (including term extension) in Europe and has been challenged in both the US and Europe. In the US, under a license agreement with a generics manufacturer, the product is expected to face generic competition prior to patent expiry. We have regulatory exclusivity for the data generated for *Exforge* in Europe until 2017 and in Japan until 2014. Generic manufacturers may attempt to circumvent this regulatory exclusivity and seek

to gain approval of a combination valsartan-amlodipine product in Europe before 2017. The patent covering the *Exforge HCT* product (the combination of amlodipine besylate, hydrochlorothiazide and valsartan) will expire in 2023 and has been challenged in the US.

- *Galvus* and *Eucreas*. Patent protection for vildagliptin, the active ingredient of *Galvus*, and the patented active ingredient in *Eucreas*, is estimated to expire, with extensions, in 2019 to 2024.
- *Xolair.* Patent protection for the active ingredient in *Xolair* will expire in 2018 in the US, in 2017 in Europe and in Japan (if the patent term extension pending there is granted), and expired in 2012 in Canada and Hong Kong. No biosimilar competitors have launched to date.
- *Arcapta*/*Onbrez.* Patent protection for the active ingredient of *Onbrez* (*Arcapta* in the US) is expected to expire in 2025 in the US (including patent term extension), in 2024 in Europe, and in 2020 in various other markets.
- *Tekturna*/*Rasilez* and combination products. Patent protection for aliskiren, the active ingredient of *Tekturna*/*Rasilez*, and various single-pill combination products, will expire in 2018 in the US (not including pediatric extension) and between 2015 and 2020 in other markets.
- *Seebri.* There is no patent protection on glycopyrronium bromide, the active ingredient in *Seebri*. A number of patents covering the formulations, commercial product and uses of this product expire by 2025. In addition, *Seebri* is entitled to regulatory exclusivity for the data generated for approval until 2022 in Europe, and until 2020 in Japan.
- *Ultibro. Ultibro* is a product which combines indacaterol, the active ingredient in *Arcapta*/*Onbrez*, with glycopyrronium bromide, the active ingredient in *Seebri*. Patent protection for indacaterol is expected to expire in 2025 in the US (including patent term extension), in 2024 in Europe (including patent term extensions), in 2025 in Japan and in 2020 in various other markets. There is no compound patent protection on glycopyrronium, but there are patents and patent applications for the dry powder formulation technology that apply to both glycopyrronium and fixed-dose combination indacaterol/glycopyrronium products. In addition, there are patents and patent applications for the combination of indacaterol and glycopyrronium that are due to expire in 2025 (excluding extensions in some countries).

Established Medicines

- *Voltaren*/*Cataflam.* Patent protection for the active ingredient in *Voltaren* has expired worldwide.
- *Ritalin LA*/*Focalin XR.* There is no patent protection for the active ingredient in *Ritalin* or *Focalin*. A number of patents covering the formulation will expire in 2015 and 2019. Several generic manufacturers have filed applications to market generic versions of *Ritalin LA* and *Focalin XR* in the US. Litigation against several generic manufacturers was initiated in the US. These patent litigations have been settled.

Specialty Care

Ophthalmology

- *Lucentis.* Patent protection for the active ingredient in *Lucentis* expires in 2018-22 in Europe and Japan. Novartis licensed *Lucentis* from Genentech for development and commercialization outside the US.

Neuroscience

- *Gilenya.* Patent protection for fingolimod, the active ingredient in *Gilenya* (licensed from Mitsubishi Tanabe Pharma Corporation), is expected to expire in 2019 in the US (including a

5-year patent term extension), and in 2018 in Europe and Japan (including a 5-year patent term extension). In Europe and Japan, we have regulatory exclusivity for the data generated for approval of *Gilenya* until 2021, which could possibly be extended by one year in Europe. A patent for the commercial formulation of *Gilenya* has been granted in most major markets (including Australia and Russia, where there is no compound patent). This patent will expire in 2024 in most countries, including Europe and Japan, and in 2026 in the US.

- *Exelon.* Patent protection for rivastigmine, the active ingredient in *Exelon*, granted to Proterra and licensed to Novartis, expired in August 2012 in the US and in 2011 in most other major markets. *Exelon* capsules are now subject to generic competition in major markets, including the US and all of Europe. We hold a patent on a specific isomeric form of the active ingredient used in *Exelon* that expires in 2014 in the US. *Exelon* Patch is covered by a formulation patent expiring in 2019 in major markets. In June 2013, the European Patent Office granted a patent (expiring in 2026) covering a dosage regimen of *Exelon* Patch. Since April 2011, four generic manufacturers have filed applications to market generic versions of the *Exelon* Patch in the US, and challenged the patents covering the *Exelon* Patch. We filed infringement lawsuits against all of these manufacturers. In 2012, we became aware that generic rivastigmine patches were being developed and manufactured in South Korea for markets including Europe. We have filed an infringement lawsuit under our South Korean patents. In 2013, generic patches manufactured in South Korea and Germany were launched in Germany, followed by certain other European countries. We are taking steps to enforce the European dosage regimen patent against the manufacturers and distributors of those patches.
- *Comtan.* Patent protection for entacapone, the active ingredient in *Comtan*, licensed from Orion, has expired in Europe and the US and generic versions of *Comtan* are available.
- *Stalevo.* Patent protection for entacapone, one of the active ingredients in *Stalevo*, has expired in Europe and the US (see above). *Stalevo* is protected by additional patents expiring up to 2020. Patent litigation by Orion in the US against generic manufacturers settled and generic versions of *Stalevo* were launched in the US. Novartis was not a party to the US litigation.

Integrated Hospital Care

- *Neoral*/*Sandimmune.* Patent protection for the cyclosporine ingredient of *Neoral*/*Sandimmune* has expired worldwide.
- *Myfortic.* There is no patent protection for the active ingredient in *Myfortic*. Patents covering the formulation will expire in 2017. In the US, four patent litigations have been settled and a generic version of *Myfortic* is currently available. Generic manufacturers are seeking approval for generic versions of *Myfortic* in some European countries.
- *Ilaris.* Patent protection for the active ingredient in *Ilaris* is expected to expire in 2024 in the US and in Europe.

Critical Care

- *TOBI Podhaler.* There is no patent protection for the active ingredient, tobramycin. Patents covering the commercial product will expire from 2018 to 2022 in the US and Europe. Additional patent applications are also pending with respect to the commercial product in the US and Europe. If the last-filed of these applications were granted, then that patent would expire in 2025. In addition, in Europe, the product is entitled to orphan drug status until 2021 for the current approved indication.

Compounds in Development

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

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

- AIN457. Patent protection for secukinumab, an anti-IL-17 monoclonal antibody, is expected to expire in 2028 in the US and 2030 in Europe.
- RLX030. Patent protection for the serelaxin molecule (human relaxin-2) has expired and the patents covering the formulation and process will expire shortly after the product's projected launch date. A patent covering the method of using serelaxin to treat acute heart failure has been granted in the US and expires in 2029. This use patent is now under examination worldwide in markets that permit use patents. Serelaxin is entitled to post-approval regulatory exclusivity for 12 years in the US, 11 years in Europe and 8 years in Japan.
- SOM230: Patent protection for pasireotide, including patent term extensions, is expected to expire in the US and Europe in 2026.

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

ALCON

Our Alcon Division is a leader in the research, development, manufacturing and marketing of eye care products worldwide. As of December 31, 2013, the Alcon Division employed 25,494 full-time equivalent associates worldwide in 75 countries. In 2013, the Alcon Division had consolidated net sales of $10.5 billion representing 18% of total Group net sales.

Alcon is a global leader in eye care and offers an extensive breadth of products serving the full lifecycle of patient needs across eye diseases, vision conditions and refractive errors, and is our second largest Division based on sales. To meet the needs of ophthalmologists, surgeons, optometrists, opticians and physician specialists, Alcon operates with three businesses: Surgical, Ophthalmic Pharmaceuticals and Vision Care. Alcon sells products in 180 markets, and runs operations in 75 countries. Each business operates with specialized sales forces and marketing support.

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

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

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

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

The merger of Alcon into Novartis was completed in April 2011. The merger united the strengths of Alcon, CIBA Vision and Novartis Ophthalmics into one eye care business. See "Item 5. Operating and Financial Review and Prospects—Item 5.A Operating Results—Factors Affecting Comparability of Year-On-Year Results of Operations—Recent Significant Transactions—Acquisitions in 2011—Alcon full ownership and merger in 2011." At that time, Alcon's portfolio of generic ophthalmic medicines sold through its Falcon business unit primarily in the US, was integrated into our Sandoz Division. Alcon has continued to manufacture the Falcon generics products and supply them to Sandoz. See "—Sandoz."

Alcon Division Products

Surgical

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

Alcon's Surgical portfolio includes the *Infiniti* vision system to perform cataract surgeries, the *Constellation* vision system for retinal operations, and the *Wavelight* refractive suite for refractive procedures. Alcon also offers the *AcrySof* family of intraocular lenses (IOLs) to treat cataracts, including the *AcrySof IQ*, *AcrySof IQ ReSTOR, AcrySof IQ Toric* and *AcrySof IQ ReSTOR Toric* IOLs. In addition,

Alcon provides advanced viscoelastics, surgical solutions, surgical packs and other disposable products for cataract and vitreoretinal surgery. The portfolio also includes the Cataract Refractive Suite, a suite of equipment to help plan and perform some of the most challenging steps of cataract surgery with automation and precision. It is comprised of the *Verion* image guided system, an ocular surgical planning, imaging and guidance technology; the *Centurion* vision system phacoemulsification technology platform; the *LuxOR LX3* surgical microscope for greater visualization during surgery; as well as the *LenSx* laser, a femtosecond laser for increased precision and reproducibility for the corneal incision, capsulorhexis and lens fragmentation steps of the procedure.

Ophthalmic Pharmaceuticals

Our Alcon Division's Ophthalmic Pharmaceuticals business combined Alcon's broad range of pharmaceuticals with selected ophthalmic products (excluding *Lucentis*) previously marketed by the Novartis Pharmaceuticals Division. The products treat chronic and acute conditions of the eye including glaucoma, elevated intraocular pressure (associated with glaucoma), eye infection and inflammation, eye allergies, and dry eye. Our Alcon Division's Ophthalmic Pharmaceuticals business also oversees the line of professionally driven over-the-counter brands that include artificial tears and ocular vitamins. Product highlights within the Alcon Division's Ophthalmic Pharmaceuticals portfolio include *Jetrea* intravitreal injection for treating vitreomacular traction, including macular hole; *Ilevro* ophthalmic suspension for the treatment of pain and inflammation associated with cataract surgery; *Simbrinza* suspension to lower intraocular pressure as a fixed-dose combination; *Travatan Z* ophthalmic solution and *DuoTrav* ophthalmic solution for the treatment of elevated intraocular pressure associated with glaucoma; *Vigamox* ophthalmic solution for bacterial conjunctivitis; *Pataday* ophthalmic solution for ocular itching associated with allergic conjunctivitis; *Nevanac* ophthalmic suspension for eye pain and inflammation following cataract surgery, and to reduce the risk of macular edema associated with cataract surgery in diabetic patients; and the *Systane* family of over-the-counter products for dry eye relief.

Vision Care

Our Alcon Division's Vision Care business combined the portfolio of contact lenses and lens care products that had been sold by our former CIBA Vision Business Unit, with Alcon's contact lens care solution portfolio. Our contact lens care solutions business includes the *Opti-Free* line of multi-purpose disinfecting solutions, as well as the *Clear Care* and *AOSept Plus* hydrogen peroxide lens care solutions. Alcon also offers a broad portfolio of silicone hydrogel, daily disposables and color contact lenses, including our *Air Optix*, *Dailies* and *Freshlook* brands. Our *Dailies* business now includes *Dailies Total1* lenses, a first-of-its-kind water gradient contact lens. Through the integration of CIBA Vision products, Alcon is now one of the largest manufacturers of contact lenses and lens care products.

New Products

Alcon launched a number of significant products in 2013, and also received a number of key approvals, including:

- *AcrySof IQ ReSTOR Multifocal Toric IOL*—advanced technology intraocular lenses to correct cataracts, as well as refractive errors like astigmatism for improved near and intermediate vision, launched in China.
- Cataract Refractive Suite—suite of tools for use during cataract surgery launched in the US and EU.
- *Centurion* vision system—Alcon's next-generation phacoemulsification system for use during cataract surgery launched in the US and EU.
- *Air Optix Colors* lenses—silicone hydrogel, color cosmetic contact lenses received EMA approval for natural eye color enhancement.

- *Dailies Aqua Comfort Plus Toric* lenses—silicone hydrogel, daily disposable contact lenses for improving refractive errors, such as astigmatism, received FDA approval.
- *Dailies Illuminate* lenses—color contact lenses introduced a new color, Light Brown, in Japan.
- *Dailies Total1* lenses—daily disposable, water gradient contact lenses launched in the US, Switzerland, Canada, UK, Spain and Portugal, while also receiving approval in China.
- *Azorga* (Brinzolamide 10mg/ml+timolol 5mg/ml) suspension—received approval in Japan for the treatment of elevated intraocular pressure associated with glaucoma or ocular hypertension.
- *Ilevro* (nepafenac ophthalmic suspension), 0.3%—launched in the US, received EMA approval and launched in Europe, and received Health Canada approval for the once-daily treatment of pain and inflammation associated with cataract surgery.
- *Jetrea* (ocriplasmin) intravitreal injection—the first pharmacological treatment for vitreomacular traction, including macular hole, received EMA approval and launched in Germany, Benelux the Nordics, and the UK in the private market. The product also launched in Canada after receiving a Notice of Compliance and approval from Health Canada.
- *Simbrinza* (brinzolamide, 1.0%/Brimonidine tartrate 0.2%) suspension—received FDA approval and launched in the US for treatment of elevated intraocular pressure associated with glaucoma.

Key Marketed Products

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

Surgical

Cataract	*Acrysof* family of intraocular lenses includes but is not limited to: *Acrysof IQ ReSTOR, Acrysof IQ Toric* and *Acrysof IQ ReSTOR Toric* advanced technology intraocular lenses that correct cataracts with presbyopia and/or astigmatism Cataract Refractive Suite designed to streamline the cataract surgical procedure through surgical planning and execution *Centurion* vision system intelligent phacoemulsification technology platform with cataract removal capabilities *Infiniti* vision system with the *OZil* torsional hand piece for cataract procedures *LenSx* laser used for specific steps in the cataract surgical procedure *LuxOR* microscope used for ophthalmic surgical procedures
Vitreoretinal	*Constellation* vision system for vitreoretinal operations *Constellation Ultravit* vitrectomy probe Vitrectomy Probes in 23G, *25+* *Purepoint* laser system *Grieshaber* surgical instruments *Edgeplus* blade trocar cannula system

Refractive	*Allegretto Wave Eye-Q* excimer laser for LASIK vision correction *Wavelight FS200* laser for specific steps in LASIK surgical procedures *Wavelight EX500* laser for LASIK vision correction *Acrysof Cachet* phakic intraocular lens that corrects moderate to high myopia
Glaucoma	*EX-PRESS* glaucoma filtration device

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

Ophthalmic Pharmaceuticals

Glaucoma	*Simbrinza* suspension to lower intraocular pressure without a beta blocker *Travatan* and *Travatan Z* ophthalmic solutions to lower intraocular pressure *Azopt* ophthalmic suspension to lower intraocular pressure *DuoTrav* ophthalmic solution to lower intraocular pressure (outside US markets) *Azarga*/*Azorga* ophthalmic suspension to lower intraocular pressure (outside US markets) *Nyogel* eye gel for reduction of intraocular pressure
Anti-Infectives	*Vigamox* and *Moxeza* ophthalmic solution for treatment of bacterial conjunctivitis *Okacin* ophthalmic solution for treatment of bacterial conjunctivitis (Turkey only)
Anti-Inflammation	*Ilevro* suspension to treat pain and inflammation following cataract surgery *Nevanac* ophthalmic suspension to treat pain and inflammation following cataract surgery, and to reduce the risk of macular edema associated with cataract surgery in diabetic patients *Durezol* emulsion to treat pain and inflammation associated with eye surgery, and to treat anterior uveitis *TobraDex* and *TobraDex ST* ophthalmic suspensions, combination anti-infective/anti-inflammatory products *Voltaren* Ophtha treatment of postoperative inflammation after cataract surgery, temporary relief of pain and photophobia after refractive surgery

Dry Eye	The *Systane* family of over-the-counter dry eye products: *Systane Balance* lubricant eye drops *Systane Ultra* lubricant eye drops *Systane* lubricant eye drops *Systane* gel drops *Systane* lid wipes Lubricants for eye dryness, discomfort or ocular fatigue: *GenTeal* eye drops *Viscotears* liquid gel *Oculotect* eye drops (outside US markets) *Hypotears* lubricant eye drops
Allergy	*Patanol* and *Pataday* ophthalmic solutions for ocular itching associated with allergic conjunctivitis *Patanase* nasal spray for seasonal nasal allergy symptoms *Zaditor* antihistamine eye drops for temporary relief of itchy eyes associated with eye allergies (over-the-counter in the US) *Zaditen* Ophtha an H1-antagonist to fight allergic conjunctivitis *Livostin* an H1-antagonist to fight allergic conjunctivitis (Canada only)
Ear Infections	Ciprodex®* Otic suspension to treat middle and outer ear infections
Ocular Nutrition	*ICaps* eye vitamin dietary supplements provide essential dietary ingredients to support eye health *Vitalux* nutrient supplements help patients with age-related macular degeneration maintain their vision (outside US markets)
Other Products	*Antikatarata* supplementary treatment of lens opacities (Russia only)
Retinal	*Jetrea* (ocriplasmin) intravitreal injection for the treatment of vitreomacular traction, including macular hole

* CiproDex® is a registered trademark of Bayer, AG.

Vision Care

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

Selected Development Projects

Surgical

Project/Product	Mechanism of action	Potential indication	Planned submission date/Current Phase
AcrySof IQ ReSTOR 2.5D	Multifocal aspheric intraocular lens	Presbyopia and cataractous lens replacement	Submitted US
AcrySof IQ ReSTOR Toric 2.5D	Multifocal, aspheric and cylinder correcting intraocular lens	Presbyopia and cataractous lens replacement with astigmatism correction	2014 US/Advanced development
AcrySof IQ ReSTOR Toric 3.0D	Multifocal, aspheric and cylinder correcting intraocular lens	Presbyopia and cataractous lens replacement with astigmatism correction	Submitted US
Allegretto EX-500 laser	Refractive correction	Photorefractive keratotomy	2014 US/Advanced development
LuxOR microscope	Visualization	Cataract surgery	2014/Advanced development

Ophthalmic Pharmaceuticals

Project/Product	Mechanism of action	Potential indication	Route of Administration	Planned submission date/Current Phase
EXE844	Anti-infective	Otitis externa	Topical	2014/III
EXE844b	Anti-infective	Otic infections	Topical	2015/II
EXZ829 (olopatadine hydrochloride)	Antihistamine and mast cell stabilization	Allergic conjunctivitis	Topical	2014/III
GLT137 (travoprost)	Prostaglandin analogue	Glaucoma/ocular hypertension	Topical	Submitted
Ilevro suspension (nepafenac)	Anti-inflammatory	Macular edema	Topical	2015/III
LFG316	Complement inhibition	Geographic atrophy	Intravitreal	≥ 2017/II
RTH258	Anti-VEGF	Wet macular degeneration	Intravitreal	≥ 2016/II
Simbrinza suspension (brinzolamide/brimonidine tartrate)	Carbonic anhydrase inhibitor/alpha agonist	Glaucoma/ocular hypertension	Topical	Submitted EU

Vision Care

Project/Product	Mechanism of action	Potential indication	Planned submission date/Current Phase
Air Optix Aqua Colors	Spherical correction with color enhancement	Contact lens wear	Submitted US
CLM041	Presbyopia correcting contact lens	Presbyopia correction	Submitted
LCE293	Disinfection and cleaning	Contact lens care	≥ 2014/Advanced development

Principal Markets

The principal markets for our Alcon Division include the US, Americas (except the US), Japan and Europe. The following table sets forth the aggregate 2013 net sales of the Alcon Division by region:

Alcon Division	2013 Net Sales to third parties	
	$ millions	%
United States	4,179	40
Americas (except the United States)	1,108	10
Europe	2,831	27
Rest of the World	2,378	23
Total	**10,496**	**100**

	$ millions	%
Established Markets*	7,918	75
Emerging Growth Markets*	2,578	25
Total	**10,496**	**100**

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

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

Research and Development

In 2013, the Alcon Division expensed $1.0 billion (on a core basis $0.9 billion) in research and development, which amounted to 10% of the Division's net sales. The Alcon Division expensed $1.0 billion (on a core basis $1.0 billion) and $0.9 billion (on a core basis $0.9 billion) in research and development in 2012 and 2011, respectively.

The Alcon Division has more than 2,000 associates dedicated to research and development, working to address diseases and conditions that affect vision, such as cataracts, glaucoma, retina diseases, dry eye, infection, ocular allergies and refractive error. Our Alcon Division invests $1 billion annually to drive research and new product development in eye care. Alcon's pipeline strategy is built around a proof-of-concept qualification process, which quickly identifies opportunities that have the best chance for technical success and advances those projects, while terminating others with a low probability of success.

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

Research and development activities for Alcon's surgical business are focused on expanding intraocular lens capabilities to improve refractive outcomes and on developing instruments for cataract, vitreoretinal and corneal refractive surgeries. The focus for the Vision Care business is on the research and development of new lens materials, coatings and designs to improve patient comfort, and on lens care solutions that provide the safety, disinfecting and cleaning power needed to help maintain ocular health.

Production

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

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

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

Marketing and Sales

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

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

applicable in our Ophthalmic Pharmaceuticals and Vision Care businesses, direct-to-consumer marketing campaigns are executed to promote selected products.

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

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

Competition

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

Regulation

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

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

In the EU, the CE marking is required for all medical devices sold. By affixing the CE marking, the manufacturer certifies that a product is in compliance with provisions of the EU's Medical Device Directive. Most such products are subject to a self-certification process by the manufacturer, which requires the manufacturer to confirm that the product performs to appropriate standards. This allows the manufacturer to issue a Declaration of Conformity and to notify competent authorities in the EU that the

manufacturer intends to market the product. In order to comply with European regulations, our Alcon Division maintains a full Quality Assurance system and is subject to routine auditing by a certified third party (a "notified body") to ensure that this quality system is in compliance with the requirements of the EU's Medical Device Directive as well as the requirements of the ISO quality systems' standard ISO 13485.

Intellectual Property

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

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

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

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

SANDOZ

Our Sandoz Division is a leader in developing, manufacturing and marketing generic pharmaceutical products, follow-on biopharmaceutical products and drug substances that are not protected by valid and enforceable third-party patents. As of December 31, 2013, affiliates of the Sandoz Division employed 26,905 full-time equivalent associates worldwide, and sells products in more than 140 countries. In 2013, the Sandoz Division achieved consolidated net sales of $9.2 billion, representing 16% of the Group's total net sales.

The Sandoz Division develops, manufactures, distributes and sells prescription medicines, as well as pharmaceutical and biotechnological active substances, which are not protected by valid and enforceable third-party patents. Sandoz has activities in Retail Generics, Anti-Infectives and Biopharmaceuticals & Oncology Injectables. In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals to third parties. Retail Generics includes the specialty areas of Dermatology, Respiratory and Ophthalmics. In Anti-Infectives, Sandoz manufactures active pharmaceutical ingredients and intermediates—mainly antibiotics—for internal use by Retail Generics and for sale to third-party customers. In Biopharmaceuticals, Sandoz develops, manufactures and markets protein- or other biotechnology-based products (known as biosimilars or follow-on biologics) and provides biotechnology manufacturing services to other companies, and in Oncology Injectables, Sandoz develops, manufactures and markets cytotoxic products for the hospital market.

Sandoz has three strategic priorities: to differentiate Sandoz based on its extensive global reach and advanced technical expertise in the development, manufacturing and marketing of differentiated generics and biosimilars, to be first-to-market as originators' substance patents expire or become unenforceable, and to be cost competitive by leveraging economies of scale in production and development.

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

In 2013, Sandoz launched 31 new products in the US—twice as many as in 2012—including first-to-market launches of candesartan cilexetil tablets (AstraZeneca's Atacand®) and metronidazole 1% topical gel (Galderma Labs' Metrogel®) as well as authorized generics of Merck's temozolomide (Temodar®) and Celgene's azacitidine (Vidaza®).

Key product launches in various European countries include montelukast (Merck's Singulair®), sildenafil (Pfizer's Viagra®), memantine (Lundbeck's Ebixa®/Merz Pharmaceuticals' Axura®), escitalopram (Lundbeck's Cipralex®), methylphenidate (Janssen-Cilag's Concerta®), mometasone (Merck's Nasonex®), and diclofenac (an authorized generic version of our Pharmaceuticals Division's *Voltaren*).

In Biopharmaceuticals, Sandoz continued to strengthen its global leadership in biosimilars, and to drive its contract manufacturing base business. All three Sandoz biosimilar products continue to occupy the number one biosimilar position in terms of market share in their respective markets. According to IMS data, recombinant growth hormone *Omnitrope* was the fastest growing hGH treatment globally by volume. *Omnitrope*, which is now marketed in over 40 countries, was also among Sandoz's top three products in terms of sales. In 2013, Sandoz also introduced an innovative device that provides patients with a simple and secure way to inject *Omnitrope*. Anemia medicine *Binocrit* continued to demonstrate strong growth in several European countries as a short-acting erythropoietin stimulating agent (ESA). According to IMS, Sandoz G-CSF biosimilar, *Zarzio,* became the first biosimilar to overtake its reference product (Amgen's Neupogen®), as well as market leader (Chugai's Granocyte®), and is now the most prescribed daily G-CSF by volume in Europe and the number one daily G-CSF biosimilar globally.

Sandoz made significant progress on its biosimilar pipeline in 2013, with the start of Phase III clinical trials for biosimilar etanercept (Amgen's Enbrel®) and biosimilar adalimumab (AbbVie's Humira®). Sandoz now has six molecules in Phase III trials, including a biosimilar version of the originator compound rituximab (Roche's Rituxan®/MabThera®), which is currently in a Phase III clinical trial for the treatment of follicular lymphoma, and a Phase II trial for rheumatoid arthritis. Some of the other molecules undergoing Phase III testing are biosimilar versions of pegfilgrastim (Amgen's Neulasta®), filgrastim for US registration (Amgen's Neupogen®) and epoetin alfa (Janssen's Procrit®).

Sandoz received its first European approvals in Denmark in December 2013 and in other countries including Germany and Sweden in January 2014 for its *AirFluSal Forspiro* respiratory inhaler for asthma and chronic obstructive pulmonary disease patients, which offers the proven combination of salmeterol (a long-acting inhaled $beta_2$-agonist) and fluticasone (an inhaled corticosteroid) in an innovative new inhalation device. The product's safety, efficacy and equivalence have been proven in multiple clinical trials. These approvals of *AirFluSal Forspiro* are a key element of Sandoz's strategy to introduce differentiated generic medicines.

In 2013, Sandoz continued to accelerate its efforts to build a leading, sustainable and lasting presence across Sub-Saharan Africa, where it is already the number one provider of generics medicine across French West Africa. A strong product portfolio, including anti-infectives, tuberculosis treatments and maternal and child health products, support the objective to expand on the continent and address the

needs of African patients. In 2013, Sandoz opened offices in Senegal (regional office for West Africa), Kenya, Ethiopia, Nigeria, Ghana, and Zambia. The Division also continued its ongoing work through several corporate responsibility projects, including efforts to develop "Health Shops" in Zambia in collaboration with the Zambian Ministry of Health to improve access to essential medicines in rural areas and a collaboration with Ethiopian authorities to set up a regional bioequivalence laboratory in Ethiopia. Sandoz is developing plans to expand its production capacity in Sub-Saharan Africa to address a growing demand for high-quality drugs.

New Products

Sandoz launched a number of important products in various countries in 2013, including:

- Nystatin-Triamcin cream (Bristol Myers Squibb's Mycolog®-II)
- Montelukast (Merck's Singulair®)
- Candesartan cilexetil tablets (AstraZeneca's Atacand®)
- Sildenafil (Pfizer's Viagra®)
- Zoledronic acid (authorized generic version of our Pharmaceuticals Division's *Zometa*)
- Clindamycin in 5% dextrose (Pfizer's Cleocin Phosphate® in Dextrose 5%)
- Telmisartan (Boehringer Ingelheims Micardis®)
- Capecitabine (Roche's Xeloda®)
- Temozolomide (Merck's Temodar®)
- Methylphenidate (Janssen's Concerta®)
- Memantine (Lundbeck's Ebixa®/Merz Pharmaceuticals' Axura®)
- Pioglitazone/Metformin tablets (Takeda Pharmaceuticals' Actoplus Met®)
- Metronidazole 1% topical gel (Galderma Lab's Metrogel®)
- Azacitidine for injection (Celgene's Vidaza®)

Key Marketed Products

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

Retail Generics

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

Anti-Infectives

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

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

Biopharmaceuticals

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

Oncology Injectables

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

Biosimilars in Phase III Development

The following table describes Sandoz's biosimilar projects that are in Phase III development:

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

* Planned submission for US.

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

Principal Markets

The two largest generics markets in the world—the US and Europe—are the principal markets for Sandoz, although Sandoz sells products in more than 140 countries. The following table sets forth the aggregate 2013 net sales of Sandoz by region:

Sandoz	2013 Net Sales to third parties	
	$ millions	%
United States	2,821	31
Americas (except the United States)	603	7
Europe	4,596	50
Rest of the World	1,139	12
Total	**9,159**	**100**

	$ millions	%
Established Markets*	6,625	72
Emerging Growth Markets*	2,534	28
Total	**9,159**	**100**

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

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

Production

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

We manufacture and package our Sandoz products at 45 manufacturing sites across 19 countries, supplying more than 140 countries globally. Among these, our principal production facilities are located in Barleben, Germany; Kundl and Unterach, Austria; Mengeš and Ljubljana, Slovenia; Broomfield, Colorado; Wilson, North Carolina; Stryków, Poland; Kalwe and Mahad, India; Boucherville, Canada; Cambé, Brazil; Gebze and Syntex, Turkey; and Hicksville and Melville, New York.

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

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

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

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

In November 2011, we received a Warning Letter from the FDA with respect to three of our Sandoz Division's facilities—in Broomfield, Colorado; Wilson, North Carolina; and Boucherville, Canada. The letter followed inspections at all three sites in the course of 2011, and raised concerns regarding these facilities' compliance with FDA cGMP regulations. The FDA observations in the letter related primarily to general documentation, validation and investigation practices. It stated that until the FDA confirms that the deficiencies have been corrected, the FDA can recommend that any pending applications or supplements listing Novartis affiliates as a drug manufacturer not be approved. In addition, the FDA may refuse requests to issue export certificates to our Sandoz US affiliate, or import certificates to our Sandoz Canada affiliate. The letter further states that other federal agencies may take the Warning Letter into account when considering the award of contracts.

In May 2013 we received a Warning Letter from the FDA concerning the oncology injectables manufacturing facility in Unterach, Austria. The letter contained two observations which followed an FDA inspection at the site in October 2012, and are related to historical visual inspection practices for products manufactured at the site.

We are collaborating with the FDA to correct all concerns raised in the Warning Letters, and to ensure that our products are safe and effective and meet the highest quality standards. Inspections conducted in 2013 at all three North American facilities have confirmed our progress on the committed actions. During the fourth quarter of 2012, the FDA formally notified Sandoz that the compliance status for the Broomfield, Colorado site was upgraded. In January 2014, the FDA formally notified Sandoz that the compliance status for the Boucherville, Canada site was upgraded. Work continues on closing out committed actions across the sites.

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

Marketing and Sales

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

In response to rising healthcare costs, many governments and private medical care providers, such as health maintenance organizations, have instituted reimbursement schemes that favor the substitution of bioequivalent generic products for patented pharmaceutical products. In the US, statutes have been enacted by virtually all states that permit or require pharmacists to substitute a less expensive generic product for the brand-name version of a drug that has been prescribed to a patient. Generic use is growing

in Europe, but penetration rates in many EU countries (as a percentage of volume) remain well below those in the US. Legislative or regulatory changes can have a significant impact on our business in a country. In Germany, for example, the generic market is in transition and healthcare reforms have increasingly shifted decision making from physicians to insurance funds.

Our Anti-Infectives business supplies Retail Generics and the pharmaceutical industry worldwide with active pharmaceutical ingredients and intermediates, mainly in the field of antibiotics.

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

Competition

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

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

Development and Registration

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

For biosimilar products, the regulatory pathways for approving such products are still in development, or pending final implementation, in many countries outside Europe. However, at least for certain

biopharmaceutical products, a certain number of carefully targeted clinical trials in patients to determine safety and efficacy do appear to be required. Sandoz has successfully registered and launched the first biosimilar (or biosimilar type) product in Europe, the US, Canada, Japan, Taiwan, Australia and several Latin American countries, as well as two additional products in Europe.

Currently, the affiliates of the Sandoz Division employ more than 2,600 Development and Registration staff who explore alternative routes for the manufacture of known compounds and develop innovative dosage forms of well-established medicines. These associates are based worldwide, including major facilities in Holzkirchen and Rudolstadt, Germany; Kundl, Schaftenau and Unterach, Austria; Ljubljana and Mengeš, Slovenia; Boucherville, Canada; and East Hanover, New Jersey. In 2013, Sandoz expensed $0.8 billion (on a core basis $0.8 billion) in product development, which amounted to 9% of the division's net sales. Sandoz expensed $0.7 billion (on a core basis $0.7 billion, as a result, in part, of a decrease of a contingent consideration liability related to a business combination) and $0.6 billion (on a core basis $0.7 billion) in 2012 and 2011 respectively.

Regulation

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

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

In the EU, decisions on the granting of a marketing authorization are made either by the EMA under the Centralized Procedure, or by a single Member State under the national or decentralized procedure. See "—Pharmaceuticals—Regulation—European Union." Companies may submit Abridged Applications for approval of a generic medicinal product based upon its "essential similarity" to a medicinal product authorized and marketed in the EU following the expiration of the product's data exclusivity period. In such cases, the generic company is able to submit its Abridged Application based on the data submitted by the medicine's innovator, without the need to conduct extensive Phase III clinical trials of its own. For all products that received a marketing authorization in the EU after late 2005, the Abridged Application can be submitted throughout the EU. However, the data submitted by the innovator in support of its application for a marketing authorization for the reference product will be protected for ten years after the first grant of marketing authorization in all Member States, and can be extended for an additional year if a further innovative indication has been authorized for that product, based on pre-clinical and clinical trials filed by the innovator that show a significant clinical benefit in comparison to the existing therapies.

Intellectual Property

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

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

VACCINES AND DIAGNOSTICS

Vaccines and Diagnostics consists of two activities: Vaccines and Diagnostics. Following the January 9, 2014 completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., for approximately $1.7 billion in cash, the segment now consists only of Vaccines. Vaccines researches, develops, manufactures, distributes and sells human vaccines worldwide. Its products include meningococcal, influenza, pediatric, adult and travel vaccines. Diagnostics researched, developed, distributed and sold blood testing and molecular diagnostics products. As of December 31, 2013, the Vaccines and Diagnostics Division employed 6,997 full-time equivalent associates worldwide in 34 countries. In 2013, the Vaccines and Diagnostics Division had consolidated net sales of $2.0 billion representing 3% of total Group net sales.

The current product portfolio of our Vaccines and Diagnostics Division includes more than 15 marketed products. In addition, the division's portfolio of development projects includes more than 15 potential new products in various stages of clinical development.

The Novartis meningococcal franchise is expected to be a cornerstone of future growth for the division. Meningococcal disease causes approximately 50,000 deaths a year globally. Because the vast majority of infections are caused by five serogroups—A, B, C, W-135 and Y—and the distribution of strains varies greatly over time and location, we are working to deliver vaccines with broad coverage and the potential to protect all age groups at risk.

In January 2013, *Bexsero*, the Novartis Meningococcal Group B Vaccine (rDNA, component, adsorbed) received EU approval, following a positive opinion from the CHMP in November 2012. With this approval *Bexsero* became the first broad coverage vaccine to help prevent a leading cause of bacterial meningitis and septicemia in Europe. Global incidence of invasive meningococcal Group B disease (MenB) is estimated to be between 20,000 and 80,000 cases per year, with an approximate 10% fatality rate. In the UK, MenB is the cause of the majority (approximately 55%) of all bacterial meningitis and septicemia, and the cause of approximately 96% of such cases in infants. *Bexsero* received regulatory approval in Australia in August 2013 and has also been submitted for approval to health authorities in certain other countries. We are working with health authorities to provide access to *Bexsero* as soon as possible.

In July 2013, the UK Joint Commission on Vaccination and Immunisation (JCVI) released its interim recommendation regarding *Bexsero*, which advised against the inclusion of *Bexsero* in the country's National Immunisation Programme (NIP) based on cost effectiveness concerns. After multiple stakeholder responses to the interim recommendation, the JCVI issued a statement in October 2013, confirming that it would conduct further analyses before making a final recommendation on the inclusion of *Bexsero* in the NIP.

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

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

In 2013, Novartis announced that it would deliver more than 30 million doses of its seasonal influenza vaccines *Fluvirin* and *Flucelvax* to US customers for the 2013/2014 season. These doses were shipped in time for the start of public vaccination programs. Early arrival of seasonal influenza vaccines ensures that healthcare professionals are equipped to provide the earliest possible vaccination against influenza.

Young children and older adults are among the most vulnerable to influenza. *Fluad*, our adjuvanted seasonal influenza vaccine, has been approved for more than a decade in Europe to enhance the immune response in older adults, helping to overcome their naturally occurring immune vulnerability and enabling effective protection against influenza.

Novartis has been awarded various contracts by the US Department of Health and Human Services (HHS) including a (pre)pandemic preparedness contract and an Advanced Development and Manufacturing (ADM) Center contract. Under the terms of the ADM contract, our production facility in Holly Springs, North Carolina will provide late-stage development and manufacturing expertise and capabilities to support HHS-driven projects, including development of new biodefense agents and rapid manufacturing response in the event of a public health emergency. The (pre)pandemic preparedness contract was used to support activities initiated by Novartis to develop a new vaccine for H7N9, a strain of avian influenza that emerged in China in early 2013. In addition, Novartis remains dedicated to working with the World Health Organization and other stakeholders to support global pandemic preparedness, including affordable and equitable access to pandemic vaccines for developing countries.

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

In 2011, Novartis Vaccines completed the acquisition of an 85% stake in the vaccines company Zhejiang Tianyuan Bio-Pharmaceutical Co., Ltd. Zhejiang Tianyuan offers marketed vaccine products in China. We collaborate with Tianyuan on strengthening our existing product portfolio and expanding our innovation capabilities. This acquisition is also expected to facilitate the introduction of additional Novartis vaccines into China where there continues to be tens of thousands of new cases of vaccine-preventable diseases each year.

Vaccines and Diagnostics Division Products

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

Vaccines Key Marketed Products

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

(1) In collaboration with Valneva.

(2) In collaboration with Crucell.

Vaccines Key Products in Development

Project/product	Common name	Vaccine Type	Planned submission dates/Current phase
Acellular Pertussis combination . . .	Tdap vaccine	Pediatric	≥2015/I
Bexsero US	Meningococcal B vaccine	Meningitis	≥2015/II
C. difficile[1]	*C. difficile* vaccine	Hospital Infections	≥2015/I
Fluad US	Seasonal influenza vaccine	Seasonal Influenza	2014/III
Flucelvax pediatric US	Seasonal influenza vaccine	Seasonal Influenza	≥2015/III
Flucelvax QIV	Seasonal influenza vaccine	Seasonal Influenza	≥2015/III
Group B *streptococcus*	Group B *streptococcus* vaccine	Maternal	≥2015/II
H5N1 flu cell culture vaccine[2] . . .	Pandemic influenza vaccine	Pandemic	≥2015/II
H7N9[2]	H7N9 vaccine	Pandemic Influenza	≥2015/Not applicable
Human immunodeficiency virus (HIV)[3]	HIV vaccine	HIV	≥2015/I
MenABCWY	Meningococcal A, B, C, W and Y vaccine	Meningitis	≥2015/II
Menjugate liquid	Meningococcal C vaccine	Meningitis	2013/Submission
P. aeruginosa[1]	*P. aeruginosa* vaccine	Hospital Infections	≥2015/II
Quadrivalent influenza vaccine—pediatric adjuvanted	Seasonal influenza vaccine	Seasonal Influenza	≥2015/III
S. aureus	*S. aureus* vaccine	Hospital Infections	≥2015/I

(1) Collaboration with Valneva.

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

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

Principal Markets

The principal markets for our Vaccines and Diagnostics Division include the US and Europe. The following table sets forth the aggregate 2013 net sales of the Vaccines and Diagnostics Division by region:

Vaccines and Diagnostics	2013 Net Sales to third parties	
	$ millions	%
United States	821	41
Americas (except the United States)	184	9
Europe	654	33
Rest of the World	328	17
Total	**1,987**	**100**

	$ millions	%
Established Markets*	1,512	76
Emerging Growth Markets*	475	24
Total	**1,987**	**100**

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

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

Research and Development

In 2013, the Vaccines and Diagnostics Division expensed $0.5 billion (on a core basis $0.5 billion) in research and development, which amounted to 24% of the division's net sales. The Vaccines and Diagnostics Division expensed $0.5 billion (on a core basis $0.4 billion) and $0.5 billion (on a core basis $0.5 billion) in research and development in 2012 and 2011 respectively.

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

Production

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

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

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

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

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

Marketing and Sales

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

Competition

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

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

Regulation

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

Intellectual Property

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

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

CONSUMER HEALTH

Consumer Health is a leader in the research, development, manufacturing and marketing of a wide range of competitively differentiated products that restore, maintain or improve the health and well-being of consumers, as well as pets and livestock. The business of Consumer Health is conducted by a number of affiliated companies throughout the world. Consumer Health consists of the following two divisions:

- OTC (over-the-counter medicines)
- Animal Health

Each division has its own research, development, manufacturing, distribution and selling capabilities. However, neither division is material enough to the Group to be separately disclosed as a segment. As of December 31, 2013, the affiliates of Consumer Health employed 9,213 full-time equivalent associates worldwide. In 2013, the affiliates of Consumer Health achieved consolidated net sales of $4.1 billion, which represented 7% of the Group's total net sales.

The divisions of Consumer Health place considerable emphasis on the development of strong, consumer-oriented and trustworthy brands. To deliver accelerated sales growth and to achieve leadership positions in the fields in which we compete, the divisions of Consumer Health seek to give voice to the consumer and to determine the needs and desires of consumers.

In the dynamic world of consumer healthcare, consumers are becoming more knowledgeable about health and the benefits of self-medication. The success of each division depends upon its ability to anticipate and meet the needs of consumers and health professionals worldwide.

The following is a description of the two Consumer Health divisions:

- OTC (over-the-counter medicines) is a leader in offering products designed for self-care and prevention of common medical conditions and ailments to enhance people's overall health and well-being. The business of OTC is conducted by a number of affiliated companies in more than 50 countries. The OTC business focuses on a group of strategic global brands in leading product categories that include treatments for cough/cold/respiratory ailments (e.g., *Theraflu* and *Otrivin*) and pain relief (e.g., *Excedrin* and *Voltaren*), as well as products for digestive health (e.g., *Benefiber* and *Prevacid24HR*), dermatology (e.g., *Lamisil* and *Fenistil*), and smoking cessation (*Nicotinell*).
- Animal Health offers products and services to save, prolong and improve animal lives, focusing on both companion and farm animals (including cultivated fish). The business of Animal Health is conducted by affiliated companies in approximately 40 countries. Animal Health has a dedicated research and development team that benefits from synergies with other Novartis businesses, most notably research in the Pharmaceuticals Division. Key products for companion animals include *Atopica* (atopic dermatitis management), *Deramaxx* and *Onsior* (pain relief), *Fortekor* (heart failure in dogs, chronic renal insufficiency in cats), and *Sentinel*/*Milbemax*/*Interceptor* (intestinal parasite control and heartworm prevention), while leading farm animal products include the therapeutic anti-infective *Denagard*, an effective broad-spectrum antimicrobial used to treat and control bacteria in swine, *CLiK,* an effective insect growth regulator used to control blowfly strike in sheep, cattle vaccines used to prevent respiratory and reproductive diseases in beef and dairy cattle, and *Zolvix*, a sheep drench representing the first new sheep anthelmintic class in 25 years. Aquaculture products include vaccines and treatments mainly used in salmon farming.

Principal Markets

The principal markets for Consumer Health are the US and Europe. The following table sets forth the aggregate 2013 net sales of Consumer Health by region:

Consumer Health	2013 Net Sales to third parties	
	$ millions	%
United States	847	21
Americas (except the United States)	420	10
Europe	2,004	49
Rest of the World	793	20
Total net sales	**4,064**	**100**

	$ millions	%
Established Markets*	2,636	65
Emerging Growth Markets*	1,428	35
Total net sales	**4,064**	**100**

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

Sales of our OTC Division are marked by a high degree of seasonality, with our cough, cold and respiratory brands significantly affected by the timing and severity of the annual cold and flu and allergy seasons. Sales of our Animal Health Division's livestock segment can also fluctuate seasonally, and can be significantly affected by climatic and economic conditions, or by changing health or reproduction rates of animal populations. Sales of most of our other products are not subject to material changes in seasonal demand.

Production

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

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

Animal Health: Approximately 80% of our production volume is manufactured by third parties and Novartis affiliates in other divisions. Animal Health has production facilities of its own located around the world, with main sites in Wusi Farm, China; Dundee, UK; Larchwood, Iowa; Charlottetown, Canada; and Huningue, France.

While production practices may vary by division, we generally obtain our raw materials, intermediates and active ingredients from suppliers around the world. The raw materials, intermediates and active ingredients we purchase are generally subject to market price fluctuations. We seek to avoid these fluctuations, where possible, through the use of long-term supply contracts. We also proactively monitor

markets and developments that could have an adverse effect on the supply of essential materials. All raw materials we purchase must comply with our quality standards.

In December 2011, we suspended operations and shipments from the OTC Division facility located at Lincoln, Nebraska, which also produces certain products for our Animal Health Division. This action was taken to accelerate maintenance and other improvement activities at the site. Subsequently, in 2012 and 2013, we recalled certain OTC Division products that were produced at the Lincoln facility. We made significant progress in 2012 and 2013 in the remediation of quality issues at Lincoln, and have out-sourced the production of certain Lincoln products, while discontinuing others. We resumed commercial production of the Animal Health product *Sentinel* at the Lincoln facility in 2013, and the product was re-launched to the US veterinary market in April 2013. In November 2013, we also resumed shipment of the OTC product *Excedrin* to the US market from Lincoln following the FDA's October 2013 inspection of the site which resulted in no Form 483 observations. However, as of the date of this Form 20-F, it is not possible to determine when the plant will resume full operations. As a result of the manufacturing issues at Lincoln, we have suffered and may continue to suffer significant losses in sales and market share. In addition, we have been required to expend considerable resources on the remediation of the issues at this site. Should we fail to complete the planned improvements at the site in agreement with FDA in a timely manner, then we may suffer significant additional losses in sales and drainage of resources, and we could be subject to legal action without further notice.

As a result of the activities at Lincoln, Consumer Health has experienced, and continues to experience, significant supply interruptions, and there can be no assurance that supply will not be interrupted again in the future as a result of unforeseen circumstances. The manufacture of our products is complex and heavily regulated, which means that supply is never guaranteed. If we or our third-party suppliers fail to comply fully with regulations then there could be another product recall or other shutdown or disruption of our production activities. We have implemented a global manufacturing strategy to maximize business continuity in case of business interruptions or other unforeseen catastrophic events. However, there can be no guarantee that we will be able to successfully manage such issues when they arise.

Marketing and Sales

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

Animal Health: Animal Health's products are mostly prescription-only treatments for both farm and companion animals. The major distribution channel is veterinarians, either directly or through wholesalers of veterinary products. Primary marketing efforts are targeted at veterinarians using such marketing tools as targeted personal selling, printed materials, direct mail, advertisements, articles in the veterinary specialty press, and conferences and educational events for veterinarians. In addition, we engage in general public relations activities and media advertising, including brand websites and other direct advertisements of brands, to the extent permitted by law in each country.

Competition

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

that are made with the same active ingredients as ours. These products do not carry our trusted brand names, but they also do not carry the burden of the expensive advertising and marketing which helped to establish a demand for the product. As a result, the store brands may be sold at lower prices. In recent years, consumers have increasingly begun to purchase store brand OTC products instead of branded products.

Research and Development

OTC: At OTC, the focus of research and development activities is primarily on pain relief and cough/cold/respiratory treatments, as well as potential new therapeutic categories for the business. OTC also works closely with the Pharmaceuticals Division to evaluate appropriate products that can be switched from prescription to OTC status. The development of line extensions to leverage brand equities is also of high importance. These extensions can take many forms, including new flavors, new galenical forms and more consumer-friendly packaging.

Animal Health: Novartis Animal Health has dedicated research and development facilities in Switzerland, North America and Australia. The main focus for research is identification of potential new parasiticides and therapeutics in key areas of internal medicine. In addition, in the US and Canada, we devote resources to the quest for new pharmaceuticals and vaccines for farm animals and cultivated fish. Also, our researchers exploit synergy with other Novartis businesses and collaborate with external partners to develop veterinary therapeutics and vaccines. Drug delivery projects, some in collaboration with external partners, concentrate on key treatment areas and aim to improve efficacy and ease of use.

In 2013, Consumer Health expensed $0.3 billion (on a core basis $0.3 billion) in research and development, which amounted to 8% of the division's net sales. Consumer Health expensed $0.3 billion (on a core basis $0.3 billion) and $0.3 billion (on a core basis $0.3 billion) in research and development in 2012 and 2011 respectively.

Regulation

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

Animal Health: The registration procedures for animal medicines are similar to those for human medicines. An animal drug application for product registration must be accompanied by extensive data on target animal and user safety, environmental fate and toxicology, efficacy in laboratory and clinical studies, information on manufacturing, quality control and labeling as well as on residues and food safety if

applied to food-producing animals. In the US, animal health products are generally regulated by the FDA's Center for Veterinary Medicine. Certain product categories are regulated by the Environmental Protection Agency, and vaccines are under the control of the US Department of Agriculture. In the EU, veterinary medicinal products need marketing authorization from the competent authority of a member-state (national authorization) or from the EU Commission (community authorization) following either the Centralized Procedure, Mutual Recognition Procedure or the Decentralized Procedure. See "—Pharmaceuticals—Regulation."

Intellectual Property

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

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

Our Consumer Health divisions also sell products which are not currently covered by patents. Some of these products have never been patent-protected and others have lost protection due to patent expiry.

4.C Organizational Structure

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

4.D Property, Plants and Equipment

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

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

The following table sets forth our major headquarters, production and research and development facilities.

Location/Division	Size of Site (in square meters)	Major Activity
Major facilities:		
Pharmaceuticals		
East Hanover, NJ	400,000	Division US headquarters, research and development
Basel, Switzerland—St. Johann	200,000	Global Group headquarters, global division headquarters, research and development, production of drug substances and drug intermediates
Hyderabad, India	141,700	Drug safety and epidemiology, drug regulatory affairs, research and development
Stein, Switzerland	130,000	Production of sterile vials, pre-filled syringes and ampoules, and of inhalation capsules, tablets and transdermals, and of active pharmaceutical ingredients
Cambridge, MA	65,000	Global NIBR headquarters, research and development
Grimsby, UK	64,000	Production of drug substances and drug intermediates
Changshu, China	60,900	Production of drug substances and drug intermediates, research and development
Ringaskiddy, Ireland	60,000	Production of drug substances and drug intermediates
Taboao da Serra, Brazil	59,100	Production of capsules, tablets, syrups, suspensions and drop solutions, and secondary packaging activities for imported products
Kurtkoy, Turkey	52,000	Production and packaging of tablets and capsules

Location/Division	Size of Site (in square meters)	Major Activity
Suffern, NY	46,000	Production of tablets, capsules, vials and inhalation products
Emeryville, CA	43,800	Research and development
Genome Valley, India	36,880	Research and development
Singapore	29,000	Production of bulk tablets
Basel, Switzerland—Schweizerhalle	26,000	Production of drug substances and drug intermediates
Barbera, Spain	24,000	Production of tablets, capsules and inhalation products
Torre, Italy	24,000	Production of tablets and capsules
Wehr, Germany	24,000	Production of tablets, creams and ointments
Horsham, UK	21,000	Research and development
Beijing, China	19,700	Production of tablets, gels and capsules
Resende, Brazil	16,000	Production of drug substances and drug intermediates
Tokyo, Japan	15,800	Development and regulatory
Carlsbad, California	15,500	Molecular Diagnostics testing and services, clinical trial assay center
Sasayama, Japan	15,000	Production of tablets, sachets, capsules, powders, creams and suppositories, inhalation products, vials and pre-filled syringes.
Shanghai, China	14,200	Research and development
Morris Plains, NJ	14,000	Production of personalized medicine
San Carlos, California	14,000	Research and development, production of capsules for inhalation
Cairo, Egypt	12,400	Production of tablets, capsules, creams, liquids and sterile products

Location/Division	Size of Site (in square meters)	Major Activity
Basel, Switzerland—Klybeck	11,000	Production of drug substances and drug intermediates, research and development
Schaftenau, Austria	10,900	Production of vials
Huningue, France	8,600	Production of biopharmaceutical drug substances
Vacaville, California	7,400	Production of biopharmaceutical drug substances
Kent, UK	1,500	Development, production of cartridges for use in diagnostic tests
Alcon		
Fort Worth, Texas	252,800	Division headquarters, production, research and development for Ophthalmic Pharmaceuticals, Vision Care, Surgical
Johns Creek, Georgia	73,400	Production, research and development for Vision Care
Grosswallstadt, Germany	72,500	Production, research and development for Vision Care
Puurs, Belgium	55,000	Production for Ophthalmic Pharmaceuticals, Surgical
Singapore	50,000	Production for Ophthalmic Pharmaceuticals, Vision Care
Barcelona, Spain	41,100	Production for Ophthalmic Pharmaceuticals
Houston, Texas	36,300	Production for Surgical
Johor, Malaysia	35,000	Production for Vision Care
Pulau Batam, Indonesia	27,000	Production for Vision Care
Des Plaines, IL	27,000	Production for Vision Care
Huntington, West Virginia	24,600	Production for Surgical
Irvine, California	20,700	Production for Surgical
Sinking Spring, Pennsylvania	18,000	Production for Surgical
Lake Forest, California	17,100	Research and development for Surgical

Location/Division	Size of Site (in square meters)	Major Activity
Mississauga, Canada	15,000	Production for Vision Care
Kaysersberg, France	14,800	Production for Ophthalmic Pharmaceuticals
Cork, Ireland	13,700	Production for Surgical
Erlangen, Germany	8,700	Research and development for Surgical
Sao Paulo, Brazil	8,400	Production for Ophthalmic Pharmaceuticals
Pressath, Germany	7,400	Production for Surgical
Aliso Viejo, California	7,300	Production, research and development for Surgical
Schaffhausen, Switzerland	5,500	Production, research and development for Surgical
Mexico City, Mexico	2,900	Production for Ophthalmic Pharmaceuticals
Cumming, Georgia	1,400	Production, research and development for Surgical
Neve Ilan, Israel	1,000	Production for Surgical
Sandoz		
Kundl and Schaftenau, Austria	449,000	Production of biotech products, anti-infectives, active drug substances, product development
Ljubljana, Slovenia	120,000	Production of broad range of finished dosage forms
Hicksville, NY	101,700	Production of dermatology products
Barleben, Germany	95,000	Production of broad range of finished dosage forms
Holzkirchen, Germany	72,300	Division headquarters, production of oral films, transdermal delivery systems, matrix patches, product development
Broomfield, CO	60,000	Production of broad range of finished dosage forms
Mengeš, Slovenia	58,000	Production of biotechnology products and active drug substances
Kalwe, India	48,000	Production of broad range of finished dosage forms

Location/Division	Size of Site (in square meters)	Major Activity
Mahad, India	43,000	Production of active drug substances
Gebze, Turkey	42,000	Production of broad range of finished dosage forms
Rudolstadt, Germany	37,000	Production of inhalation technology, ophthalmics and nasal products, development
Cambé, Brazil	32,000	Production of broad range of finished dosage forms
Wilson, NC	31,000	Production of broad range of finished dosage forms
Boucherville, Canada	20,000	Production of injectable products, development
Stryków, Poland	20,000	Production of broad range of finished dosage forms
Melville, NY	15,800	Production of dermatology products
Unterach, Austria	15,000	Production of oncology injectables, development
Zhongshan, China	7,700	Production of tablets and oral solutions
East Hanover, NJ	6,000	Development
Vaccines and Diagnostics		
Siena/Rosia, Italy	110,000	Production, research and development for vaccines and bacteriology
Marburg, Germany	80,000	Production, research and development for vaccines and adjuvant, quality control for all vaccines products
Hangzhou, China	50,800	Production of vaccines
Holly Springs, NC	50,000	Production, research and development of vaccines and adjuvant
Liverpool, UK	26,000	Production of vaccines
Ankleshwar, India	11,000	Production of vaccines
Cambridge, MA	9,000	Division headquarters, virology research

Location/Division	Size of Site (in square meters)	Major Activity
Consumer Health—OTC		
Lincoln, NE	48,000	Production of solids and powders, research and development
Jamshoro, Pakistan	24,000	Production of solids, semi-solids and liquids
Nyon, Switzerland	15,000	Production of semi-solids and liquids, research and development
Parsippany, NJ	14,000	Division headquarters
Humacao, Puerto Rico	13,000	Production of solids
Hyderabad, India	3000	Research and development
Consumer Health—Animal Health		
Wusi Farm, China	39,000	Production of insecticides, antibacterials, acaricides, powders
St. Aubin, Switzerland	26,000	Research on parasiticides and therapeutics for companion animals and farm animals
Larchwood, IA	13,000	Production, research and development of veterinary immunologicals
Dundee, UK	11,000	Production of liquid products
Greensboro, NC	10,200	North American division headquarters
Huningue, France	5,000	Production of tablets, creams, ointments, suspensions and liquids
Charlottetown, Canada	5,000	Production of veterinary vaccines for aquaculture
Victoria, Canada	4,500	Aquaculture vaccine research
Basel, Switzerland	4,200	Global division headquarters, research and formulation technology
Yarrandoo, Australia	3,000	Research primarily focused on farm animals
Puerto Varas, Chile	2,100	Research and development, warehouse space

In the fourth quarter of 2010, we announced a Group-wide review of our manufacturing footprint. In 2013, and continuing into 2014, we continued to optimize our manufacturing footprint, bringing the total number of production sites that are in the process of being restructured or divested to 20. This has and is expected to enable us to reduce excess capacity and to shift strategic product to technology competence centers. We have recorded charges related to exits, impairment charges and inventory write-offs of $115 million in 2013, bringing the total charges to $515 million since the program began. As part of this initiative, our Alcon Division announced in 2013 that it would close several of its manufacturing plants and consolidate remaining production at other existing manufacturing sites. In addition, in January 2014, we announced the closing of the Pharmaceuticals manufacturing site in Suffern, New York. Restructuring costs for Suffern will be incurred from the first quarter of 2014 onwards.

Our St. Johann site in Basel, Switzerland, is our largest research site as well as the headquarters for the Group and for the Pharmaceuticals Division. A project was started in 2001, known as "Campus," with the aim of transforming the site into a center of knowledge, innovation and encounter with a primary emphasis on international corporate functions and research activities. At that time, changes needed to be made to the site, since it had originally been designed primarily for pharmaceuticals production, but Research and Development had come to account for a greater proportion of our activities there. The Campus project is progressing as planned. By the end of 2013, 14 new buildings had begun operations, seven of them laboratory buildings. Three further buildings are in the construction phase. These buildings are scheduled to open in 2014 and at the beginning of 2015. The current phase of the long-term redevelopment of our St. Johann site in Basel, Switzerland is expected to be finalized in 2015. Through December 31, 2013, the total amount paid and committed to be paid on the Campus project was $2.5 billion. We expect that, through 2015, we will spend more than $2.5 billion on Campus and the transfer of production facilities from St. Johann to other sites in the Basel region. Preparations for the next phase beyond 2015 are under discussion. We intend to fund these expenditures from internally developed resources.

In 2007, NIBR opened a start-up facility for our new R&D center in Shanghai, China (CNIBR). In 2008, we broke ground on Phase 1 of a new facility that was originally to be home to approximately 400 R&D scientists and approximately 400 other Pharmaceuticals Division personnel. In 2009, we announced that we would expand the scope of the site and invest $1 billion over the next five years to increase the size of our operations in Shanghai. Based on a re-evaluation of the site conducted in 2010, the current Phase 1 has been extended by two buildings to fulfill the requirements for the cross-divisional Shanghai campus to house 800 offices and 400 laboratory work places. As of December 31, 2013, major structural work has been completed, including significant parts of the mechanical, electrical and plumbing installations. Construction of the external facade and interior fit-out have begun. Through December 31, 2013, the total amount paid and committed to be paid on the CNIBR Project is $689 million.

In 2010, we announced that we would build new laboratory and office space for NIBR in Cambridge, Massachusetts on an area of land close to the existing NIBR research facilities on Massachusetts Avenue. In 2011 we finalized design plans for the new buildings, received necessary zoning changes from the city of Cambridge and began preparing the site for construction. Construction began on the site in April 2012, and at the end of 2013, the steel frames of the new buildings are complete. Through December 31, 2013, the total amount paid and committed to be paid on the NIBR Project is $664 million.

In 2010, we commenced a construction project on our Pharmaceuticals Division campus in East Hanover, New Jersey. This project is expected to continue through 2014. It involves construction of three new office buildings, a parking garage, and upgrades to the site entrances. The purpose of the project is to consolidate US Pharmaceuticals Division personnel on one site to drive innovation, collaboration and productivity. The consolidation is also expected to achieve long-term cost savings resulting from the elimination of off-campus leases. As of December 31, 2013, the total amount paid and committed to be paid on this project was $548 million.

During 2012, the Pharmaceuticals Division commenced a series of projects in which we expect to invest over $300 million over the following five years. These projects are in the following three areas: implementation of a serialization product tracking program across its pharmaceutical operations network, providing a health, safety and environment / Good Manufacturing Practices upgrade for its milling and blending center at Stein, Switzerland, and for the upgrade of change control systems.

In the second quarter of 2012, Novartis announced the construction of a new state-of-the-art production facility to produce solid dosage form medicines for the Pharmaceuticals Division in Stein, Switzerland. We expect our investment in this facility to exceed CHF 500 million. The new facility is planned to replace an older facility which will be partially demolished by 2016. Stein is planned to be a technological competence center for both sterile and solid dosage form drugs, while Novartis plans to expand the site's strategic role as a key platform for global launches of new pharmaceutical products. Through December 31, 2013, the total amount paid and committed to be paid on this project is $432 million.

In the fourth quarter of 2012, we announced the planned construction of a new state-of-the-art biotechnology production site in Singapore with an investment valued at over $500 million. The new facility will focus on biological drug substance manufacturing based on cell culture technology. Groundbreaking happened in February 2013 and construction is underway. The site is expected to be fully operational in 2016. It will be co-located with the pharmaceutical production site based in Tuas, Singapore. In the future, Singapore is expected to be a technological competence center for both biotechnology and pharmaceutical manufacturing at Novartis. Through December 31, 2013, the total amount paid and committed to be paid on this project is $194 million.

In December 2012, we acquired a 16,000 square meter FDA-approved manufacturing facility in Morris Plains, New Jersey, from Dendreon Corporation for $43 million. In particular, we purchased all fixed assets at the site, including all equipment, machinery, utilities, and cell therapy related plant infrastructure, while the land and building will continue to be leased from a third party. The facility, and the former Dendreon personnel whom we retained, will support both clinical and commercial production of potential new products and therapies that emerge from the Novartis-University of Pennsylvania collaboration announced in August 2012, including CTL019. The facility space and infrastructure could also accommodate future chimeric antigen receptor production activities, in addition to CTL019.

In 2008, the Vaccines and Diagnostics Division broke ground on a new rabies and tick-borne encephalitis manufacturing facility in Marburg, Germany, which is expected to require a total investment of approximately $330 million. Construction is complete and the facility is in the process of executing the necessary validation activities. Regulatory approvals for products are planned for 2014 and 2015. As of December 31, 2013, the total amount paid and committed to be paid on this project was $321 million.

In 2009, the Vaccines and Diagnostics Division opened the division's new cell culture-based influenza vaccine manufacturing site in Holly Springs, North Carolina. As of December 31, 2013, the total amount spent on the project was $422 million, net of grants reimbursed by the US government. The total investment in this new facility is expected to be least $1 billion, partly supported by grants from the US government and prior investments in flu cell culture technologies at the Novartis Vaccines site in Marburg, Germany.

The Vaccines and Diagnostics Division has commenced a project for a new vaccine manufacturing facility in Recife, Brazil. The manufacturing plant is part of Novartis Vaccines' strategy to enter the Brazilian market, and is aligned with the government's goal to become self-sufficient in vaccine production. Our total investment in the facility is expected to be approximately $480 million. The technical startup of the facility is planned for approximately 2015. As of December 31, 2013, the total amount paid and committed to be paid on this project was $105 million.

In 2010, Novartis announced the signing of a Memorandum of Understanding, confirming its intention to build a new full-scale pharmaceutical manufacturing plant in St. Petersburg, Russia, operated

by our Sandoz Division. In June 2011 we announced the commencement of construction. The plant is expected to produce approximately 1.5 billion units per year (oral solid dosage forms), of which the majority is anticipated to be generic products. Product registration for production at the site is expected to begin in 2014. Our total investment in the plant is expected to be approximately $140 million. As of December 31, 2013, the total amount paid and committed to be paid on this project was $60 million.

In 2013, the Alcon Division continued its expansion of its Johns Creek, Georgia facility for contact lens manufacturing. The capital cost for the expansion is expected to be $250 million, and production is expected to begin in 2014. Construction has added 6,500 square meters to the existing facility. As of December 31, 2013, the total amount paid and committed to be paid on this project is $213 million.

In the first quarter of 2013, the Alcon Division expanded its California operations and opened its Lake Forest facility to increase surgical research and development capabilities. Alcon signed an 11-year lease for three buildings, covering 17,000 square meters. As of December 31, 2013, the total amount paid and committed to be paid on this project is $23 million.

In the second quarter of 2013, the OTC Division announced a long-term plan to update and increase the capacity of its Nyon, Switzerland plant. The project is expected to take four years and cost up to $189 million. Basic design work for the project has been completed, and detailed design work is ongoing. As of December 31, 2013, the total amount paid and committed to be paid on this project is $9 million.

Environmental Matters

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

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

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

Item 4A. Unresolved Staff Comments

Not applicable.

Item 5. Operating and Financial Review and Prospects

5.A Operating Results

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

OVERVIEW

Novartis provides healthcare solutions that address the evolving needs of patients and societies worldwide. Our broad portfolio is organized into six global operating divisions, and we report our results in the following five segments:

- Pharmaceuticals: Innovative patent-protected prescription medicines
- Alcon: Surgical, ophthalmic pharmaceutical and vision care products
- Sandoz: Generic pharmaceuticals
- Vaccines and Diagnostics: Preventative human vaccines and blood-testing diagnostics (following the January 9, 2014 completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., the division now consists only of Vaccines)
- Consumer Health: OTC (over-the-counter medicines) and Animal Health

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

Headquartered in Basel, Switzerland, the Novartis Group companies employed approximately 136,000 full-time equivalent associates as of December 31, 2013, with operations in more than 140 countries around the world.

BUSINESS AND OPERATING ENVIRONMENT

Opportunity and Risk Summary

Our financial results are affected, to varying degrees, by the following external factors:

Transformational changes fueling demand

Aging population and shifting behaviors: The aging of the global population, as well as the prevalence of behaviors that increase risk of obesity and other chronic diseases, is driving demand for treatments Novartis provides.

Global rise in healthcare spending: Despite cost containment measures adopted by governments around the world, healthcare spending continues to increase. This is particularly true in emerging markets, where the expanding middle class has contributed to increased demand for quality care.

Scientific advances: Advances in the fields of genomics and biotechnology have provided new opportunities to more closely tailor treatments to individual patient groups, helping us demonstrate efficacy and bring innovative products to market for patients in need.

New technologies: The increasing use of connected medical devices and health information technology has made it easier for physicians to monitor patient adherence to our treatments, improving outcomes in clinical trials and the post-marketing setting.

Patient engagement: Increased access to health information and tools to communicate with providers is making patients more active participants in their own healthcare, creating a broader audience for our marketing efforts.

Shift to generics and over-the-counter products: As healthcare costs continue to rise, both governments and consumers continue to gravitate toward lower-cost treatment options such as generics and over-the-counter products, which we produce at Sandoz and OTC.

Increasingly Challenging Business Environment

Patent expirations and product competition: The loss of market exclusivity and the introduction of branded and generic competitors can significantly erode sales of our innovative products.

Regulatory and safety hurdles: The costs associated with bringing a drug to market have increased as a result of heightened regulatory requirements. Even after a drug is approved, there is a possibility that safety events could occur and materially affect our results.

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

Weak economic environment: Despite some improvement in the global economy, governments and patients worldwide continue to seek ways to contain rising healthcare costs.

Legal proceedings: There is a trend of increasing government investigations and litigations against companies in the healthcare industry. Despite our best efforts to comply with the laws of the countries in which we operate and sell products, any failure in compliance could have a material adverse effect on our business and reputation.

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

NOVARTIS STRATEGY FOR SUSTAINABLE GROWTH

We believe our diversified portfolio—with leading positions in pharmaceuticals, eye care, generics, vaccines, over-the-counter medicines and animal health—makes Novartis uniquely positioned to capture opportunities across growing segments of the healthcare industry while mitigating risks in other areas.

Our Priorities: Innovation, Growth and Productivity

Our long-term growth strategy places an emphasis on delivering positive patient outcomes through science-based innovation focused on high-growth segments of healthcare. We remain committed to three core strategic priorities—extending our lead in innovation, accelerating growth and driving productivity—all underpinned by integrity, which means a commitment to people, quality beyond compliance, ethical business practices and corporate responsibility. Our continued focus on R&D investments across divisions is expected to translate into key launches over the coming years. Our ongoing efforts to flawlessly execute product launches and growth programs across key markets help us convert our innovation pipeline into top-line growth. At the same time, our continued efforts to operate as efficiently as possible help us to reduce unnecessary complexity in order to strengthen financial results.

Extending Our Lead in Innovation

Patients are at the center of everything we do, and we have continued to prioritize innovation in order to bring new treatment solutions to market in areas where there is high unmet need. In 2013, we maintained our high level of investment in innovation, dedicating $9.9 billion, or 17% of Group net sales, to R&D activities, in an effort to help rejuvenate our portfolio.

We conduct research and early-stage development through the Novartis Institutes for BioMedical Research (NIBR), which focuses on studying molecular signaling pathways that can lead to disease. When drugs pass initial safety and efficacy tests in one disease area, we frequently initiate parallel studies in other indications because illnesses can share a common underlying pathway. We also leverage our R&D investments in Animal Health, as some of the medicines developed for human patients also may have applications for pets or farm animals.

For our oncology monoclonal antibody biosimilars programs, Sandoz and Novartis Oncology have a joint project team which leverages the strengths of both groups. Sandoz brings biosimilars, technical development, manufacturing, regulatory and IP expertise while Novartis Oncology brings therapeutic area expertise and a broad, well respected network to drive clinical trial execution. Sandoz also leverages other R&D capabilities including animal disease models from NIBR, as well as clinical trial operations support and modeling and simulation from the Pharmaceuticals Division.

Our cutting-edge research has resulted in one of the industry's most promising pipelines, both in terms of the potential to change the lives of patients and ultimately the growth prospects of the Company. For example, in 2013, we received three Breakthrough Therapy designations from the United States Food and Drug Administration, among the highest number in the industry, for our pipeline products RLX030, LDK378 and BYM338. This new, high-priority designation is intended to increase FDA interactions that may ultimately speed the development of medicines that treat serious conditions, particularly where early clinical evidence indicates that they may yield a substantial improvement over existing therapies. For example, RLX030, an investigational heart failure drug, started a second Phase III trial and is currently the only product for which a reduction in all-cause mortality has been observed in patients with acute heart failure.

Beyond our internal research activities, Novartis also collaborates with partners to develop and commercialize promising treatments that can improve patient outcomes. For example, in September, Novartis entered an exclusive global licensing and research collaboration agreement with Regenerex LLC, a biopharmaceutical company in Louisville, Kentucky regarding the use of the company's novel Facilitating Cell Therapy (FCRx) platform. The stem cell-based FCRx platform has the potential to assist in suppressing immunological responses after kidney transplants and may have curative potential for multiple underserved diseases.

Accelerating Growth Across Six Divisions

While our focus on innovation contributes to our portfolio rejuvenation, we are also focused on continuously improving our commercial execution of approved products and expanding access to our medicines in Emerging Growth Markets (EGMs)—which comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand—to drive growth across the portfolio.

In 2013, our growth products[1]—including *Gilenya*, *Afinitor*, *Tasigna*, *Galvus*, *Xolair, Lucentis*, the Q Family[2] and *Jakavi*, amongst others—contributed significantly to overall performance, comprising 31% or $18.1 billion of Group net sales, up 15% over the previous year. For example, *Galvus*, our oral type 2 diabetes treatment, reached blockbuster status in 2013 with $1.2 billion (+40% cc) in full-year sales.

Emerging Growth Markets (EGMs) also performed strongly, up 10% (cc) over 2012 to $14.7 billion or 25% of Group net sales in 2013. We made significant investments to strengthen our footprint in key markets and establish ourselves as a market leader. In Russia and Brazil, Novartis is building a significant manufacturing presence. In China, we continued our strong growth trajectory, with net sales up 23% (cc) over the previous year. China became one of our top 10 markets in 2013.

In some EGMs, where healthcare infrastructure is limited, we have created innovative business models, or "Social Ventures," to build local capabilities in healthcare. Social Ventures address societal problems that impact access to healthcare in a way that also creates a financial return for the Company. In 2013, Novartis took steps to expand *Arogya Parivar* ("Healthy Family" in Hindi), a Social Venture that helps enhance access to health education, care and treatments in rural India, to additional countries. Since

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

[2] The Q Family includes *Arcapta Neohaler*/*Onbrez Breezhaler*, *Seebri Breezhaler* and *Ultibro Breezhaler*.

launching *Arogya Parivar* in 2007, Novartis has increased access to healthcare across about 30,000 villages in India, home to more than 50 million people.

Enhancing Productivity

Across divisions, Novartis maintains a consistent focus on improving efficiency and enhancing margins, allowing us to reinvest in the business and provide value for shareholders. Ongoing productivity initiatives relate to procurement and resource allocation across the portfolio, as well as our manufacturing network, offshoring, service hubs and R&D.

In Procurement, we leveraged our scale, implemented global category management and created country Centers of Excellence in key markets. These efforts generated savings of approximately $1.5 billion in 2013.

In addition, we continued to optimize our manufacturing footprint in 2013 with the announced closure of the Alcon contact lens care manufacturing facility in Mississauga, Canada in the fourth quarter. In January 2014, we also announced the closing of the Pharmaceuticals manufacturing site in Suffern, New York, US, bringing the total number of production sites that are in process of being restructured or divested to 20. Related to these initiatives, we recorded exceptional charges of $115 million in 2013, bringing total charges to $515 million cumulatively since the program began in the fourth quarter of 2010. In January 2014, the Pharmaceuticals Division announced plans to change the size and structure of the US Primary Care Business Unit and a shift of positions within Switzerland.

We anticipate that these initiatives, coupled with the Suffern plant closure, will contribute to an exceptional charge of approximately $150 million in the first quarter of 2014.

We also made productivity gains through global business service hubs, with a focus on knowledge services like clinical development and regulatory and medical affairs, and outsourcing, with a focus on transactional and commoditized processes in Finance and IT.

Taken together, our productivity initiatives allowed us achieve savings of approximately 5% of net sales.

Novartis Structure

The Novartis Group strategy for sustainable, long-term growth is based on focused diversification, in which we seek to access multiple, growing segments of the healthcare market. Reflecting our leadership positions across the market, the Group's businesses are divided on a worldwide basis into six global operating divisions, which report results in five segments (Pharmaceuticals, Alcon, Sandoz, Vaccines and Diagnostics, and Consumer Health), and Corporate activities. Except for Consumer Health, which comprises two divisions (Over-the-Counter, or OTC, and Animal Health) that are not material enough to the Group to be reported on an individual basis, these segments reflect the Group's internal management structure and are disclosed separately because they research, develop, manufacture, distribute and sell distinct products that require different marketing strategies.

Pharmaceuticals

Pharmaceuticals researches, develops, manufactures, distributes and sells patented prescription medicines and is organized in the following business franchises: Primary Care, consisting of Primary Care medicines and Established Medicines; and Specialty Care, consisting of Ophthalmology, Neuroscience, Integrated Hospital Care and Critical Care medicines. Novartis Oncology is organized as a business unit, responsible for the global development and marketing of oncology products.

Pharmaceuticals is the largest contributor among the segments, and in 2013 accounted for $32.2 billion, or 56%, of Group net sales and $9.4 billion, or 80%, of Group operating income (excluding Corporate Income and Expense, net).

Alcon

As the global leader in eye care, Alcon researches, develops, manufactures, distributes and sells eye care products and technologies to serve the full lifecycle of eye care needs. Alcon offers a broad range of products to treat many eye diseases and conditions, and is organized into three businesses: Surgical, Ophthalmic Pharmaceuticals and Vision Care.

The Surgical portfolio includes technologies and devices for cataract, retinal, glaucoma and refractive surgery, as well as intraocular lenses to treat cataracts and refractive errors, like presbyopia and astigmatism. Alcon also provides viscoelastics, surgical solutions, surgical packs, and other disposable products for cataract and vitreoretinal surgery.

In Ophthalmic Pharmaceuticals, the portfolio includes treatment options for elevated intraocular pressure caused by glaucoma, anti-infectives to aid in the treatment of bacterial infections and bacterial conjunctivitis, ophthalmic solutions to treat inflammation and pain associated with ocular surgery, as well as an intravitreal injection for vitreomacular traction, including macular hole. The Ophthalmic Pharmaceuticals product portfolio also includes eye and nasal allergy treatments, as well as over-the-counter dry eye relief and ocular vitamins.

The Vision Care is comprised of disposable, monthly replacement, and color-enhancing contact lenses, as well as a complete line of contact lens care products including multi-purpose and hydrogen peroxide-based solutions, rewetting drops, and daily protein removers.

In 2013, Alcon accounted for $10.5 billion, or 18%, of Group net sales, and $1.2 billion, or 11% of Group operating income (excluding Corporate Income and Expense, net).

Sandoz

Sandoz develops, manufactures, distributes and sells prescription medicines, as well as pharmaceutical and biotechnological active substances, which are not protected by valid and enforceable third-party patents. Sandoz has activities in Retail Generics, Anti-Infectives and Biopharmaceuticals & Oncology Injectables. In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals to third parties. Retail Generics includes the specialty areas of Dermatology, Respiratory and Ophthalmics. In Anti-Infectives, Sandoz manufactures active pharmaceutical ingredients and intermediates—mainly antibiotics—for internal use by Retail Generics and for sale to third-party customers. In Biopharmaceuticals, Sandoz develops, manufactures and markets protein- or other biotechnology-based products (known as biosimilars or follow-on biologics) and sells biotechnology manufacturing services to other companies, and in Oncology Injectables, Sandoz develops, manufactures and markets cytotoxic products for the hospital market.

In 2013, Sandoz accounted for $9.2 billion, or 16%, of Group net sales and $1.0 billion, or 9% of Group operating income (excluding Corporate Income and Expense, net).

Vaccines and Diagnostics

Vaccines and Diagnostics consists of two activities: Vaccines and Diagnostics. Following the January 9, 2014 completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., the segment now consists only of Vaccines. Vaccines researches, develops, manufactures, distributes and sells human vaccines worldwide. Diagnostics researched, developed, distributed and sold blood testing and molecular diagnostics products.

In 2013, Vaccines and Diagnostics accounted for $2.0 billion, or 3%, of Group net sales and generated an operating loss of $165 million.

Consumer Health

Consumer Health consists of two divisions: OTC and Animal Health. Each has its own research, development, manufacturing, distribution and selling capabilities, but neither is material enough to the Group to be separately disclosed as a segment. OTC offers readily-available consumer medicine, and Animal Health provides veterinary products for farm and companion animals.

In 2013, Consumer Health accounted for $4.1 billion, or 7%, of Group net sales and $178 million, or 1%, of Group operating income (excluding Corporate Income and Expense, net).

Corporate

Corporate activities include certain functions—such as Financial Reporting & Accounting, Treasury, Internal Audit, IT, Legal, Compliance, Tax and Investor Relations—that are managed at the Corporate level and provide support to the organization but are not attributable to specific divisions. Corporate also includes the costs of our headquarters and corporate coordination functions in major countries.

RESULTS OF OPERATIONS

In evaluating the Group's performance, we consider not only the IFRS results, but also additional non-IFRS measures, in particular 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 the integration of acquisitions as well as certain other income and expense items that are, or are expected to accumulate within the year to be, over a $25 million threshold that management deems exceptional. A reconciliation between IFRS results and core results, see "—Core Results" below.

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

These non-IFRS measures are explained in more detail, see "non-IFRS measures as defined by Novartis" 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.

2013 Compared to 2012

Key figures

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

[1] Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements—Note 30").

Core Key Figures

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

(1) Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

Group overview

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

Excluding the impact of generic competition, underlying sales grew 8% in constant currencies. Growth products[3] contributed $18.1 billion or 31% of Group net sales, up from 28% in 2012. Loss of exclusivity impacted sales by approximately $2.2 billion, mainly due to *Diovan* and *Zometa/Aclasta.*

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

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

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

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

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

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

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

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

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

Net Sales by Segments

	Year ended Dec 31, 2013	Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Pharmaceuticals	32,214	32,153	0	3
Alcon	10,496	10,225	3	5
Sandoz	9,159	8,702	5	5
Vaccines and Diagnostics	1,987	1,858	7	6
Consumer Health	4,064	3,735	9	10
Net sales	**57,920**	**56,673**	**2**	**4**

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

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

Pharmaceuticals

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

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

TOP 20 PHARMACEUTICALS DIVISION PRODUCT NET SALES—2013

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

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

Pharmaceuticals Division Product Highlights—Leading Products

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

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

Diovan Group ($3.5 billion, −16% cc), consisting of *Diovan* monotherapy and the combination product *Co-Diovan*/*Diovan HCT*, saw worldwide sales decline due to the loss of exclusivity in the EU, US, Canada and other markets, as well as the impact of the conflict of interest issue regarding valsartan investigator-initiated trials in Japan. Continued growth was seen in China and select markets in Latin America, Asia Pacific, the Middle East, and Africa. With respect to *Diovan* monotherapy in the US (90% of *Diovan* Group sales in the US in 2013), no generic competitor has yet been approved by the FDA. *Diovan HCT*, however, already faces competition from multiple generic competitors in the US.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Other Products of Significance

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

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

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

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

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

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

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

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

Alcon

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

Alcon Division net sales by product category:

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

Alcon Division Highlights

Net sales growth data below refer to 2013 worldwide performance.

Surgical

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

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

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

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

Ophthalmic Pharmaceuticals

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

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

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

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

Vision Care

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

Sandoz

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

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

Vaccines and Diagnostics

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

Key progress was achieved this year with the approval of *Menveo* for infants as young as 2 months of age in the US as well as the approval of *Bexsero* in Europe, Australia and Canada, with shipments to

several European private markets starting in the fourth quarter. Additionally, we supplied *Bexsero* to Princeton University in response to a potentially deadly outbreak of meningococcal serogroup B disease.

Consumer Health

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

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

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

Operating Income by Segments

	Year ended Dec 31, 2013	% of net sales	Restated Year ended Dec 31, 2012	% of net sales	Change in $	Change in constant currencies
	$ m		$ m		%	%
Pharmaceuticals	**9,376**	**29.1**	**9,598**	**29.9**	**(2)**	**3**
Alcon	**1,232**	**11.7**	**1,465**	**14.3**	**(16)**	**(2)**
Sandoz	**1,028**	**11.2**	**1,091**	**12.5**	**(6)**	**(3)**
Vaccines and Diagnostics	**(165)**	**(8.3)**	**(250)**	**(13.5)**	**34**	**34**
Consumer Health	**178**	**4.4**	**48**	**1.3**	**nm**	**nm**
Corporate income & expenses, net	(739)		(759)[1]		3	4
Operating income	**10,910**	**18.8**	**11,193**	**19.8**	**(3)**	**5**

(1) Corporate income and expenses, net have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

nm = not meaningful

Core Operating Income by Segments

	Year ended Dec 31, 2013	% of net sales	Restated Year ended Dec 31, 2012	% of net sales	Change in $	Change in constant currencies
	$ m		$ m		%	%
Pharmaceuticals	**9,523**	**29.6**	**10,213**	**31.8**	**(7)**	**(1)**
Alcon	**3,694**	**35.2**	**3,698**	**36.2**	**0**	**6**
Sandoz	**1,541**	**16.8**	**1,503**	**17.3**	**3**	**4**
Vaccines and Diagnostics	**65**	**3.3**	**(75)**	**(4.0)**	**nm**	**nm**
Consumer Health	**298**	**7.3**	**159**	**4.3**	**87**	**95**
Corporate income & expenses, net	(636)		(656)[1]		3	5
Core operating income	**14,485**	**25.0**	**14,842**	**26.2**	**(2)**	**3**

(1) Corporate income and expenses, net have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

nm = not meaningful

Pharmaceuticals

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

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

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

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

Research and Exploratory Development expenditure was $2.7 billion in 2013, practically unchanged from 2012. Confirmatory Development expenditures in 2013 increased by 6% to $4.6 billion as compared against 2012.

Pharmaceuticals research and development expenditure

	2013	Core R&D 2013[1]	2012	Core R&D 2012[1]
	$ m	$ m	$ m	$ m
Research and Exploratory Development	2,664	2,611	2,584	2,530
Confirmatory Development	4,578	4,550	4,334	4,167
Total	**7,242**	**7,161**	**6,918**	**6,697**
% of Pharmaceuticals net sales	22.5%	22.2%	21.5%	20.8%

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

Alcon

Operating income of $1.2 billion (–16%, –2% cc) was impacted by integration and restructuring charges, partially offset by sales growth and productivity gains. Operating income margin in constant currencies decreased by 1.0 percentage point, and currency had a negative impact of 1.6 percentage points, resulting in a net decline of 2.6 percentage points to 11.7% of net sales. Adjustments to arrive at core operating income amounted to $2.5 billion, consisting of $2.0 billion for the amortization of intangible assets, $330 million of acquisition-related items, $61 million for the impairment of intangible assets and property, plant and equipment, $18 million for a net increase in contingent consideration, and $64 million of other costs. Prior-year adjustments of $2.2 billion included $1.9 billion of intangible asset amortization and $0.3 billion of acquisition-related items.

Core operating income was in line with prior year in reported terms, but up 6% in constant currencies. Core operating income margin in constant currencies increased by 0.1 percentage points; currency had a negative impact of 1.1 percentage points, resulting in a net decrease of 1.0 percentage points to 35.2% of net sales.

Core gross margin declined by 1.0 percentage point (cc), mainly due to product mix as Alcon refreshes and expands its surgical equipment install base. Marketing & Sales expenses as a percentage of net sales decreased by 0.8 percentage points (cc) compared to 2012, driven by synergies and productivity improvements, partially offset by investments in new launches. General & Administration expenses increased by 0.4 percentage points (cc), while R&D expenses decreased by 0.6 percentage points (cc). Other Income and Expense, net increased margin by 0.1 percentage points (cc).

Sandoz

Operating income decreased by 6% (–3% cc) to $1.0 billion. The operating income margin in constant currencies decreased by 1.0 percentage point; currency had a negative impact of 0.3 percentage points, resulting in a net decrease of 1.3 percentage points to 11.2% of net sales, driven by $85 million of legal provisions and the prior-year US authorized generic launch of valsartan HCT. Adjustments to arrive at core operating income amounted to a net expense of $513 million, mainly driven by $409 million for the amortization of intangible assets, as well as $85 million for legal provisions and $20 million for impairments of intangible assets. Prior-year adjustments of $412 million included $364 million of intangible asset amortization and $62 million of acquisition-related items.

Core operating income grew by 3% (+4% cc) to $1.5 billion. The difference between reported and core operating income growth was driven by higher exceptional items, particularly the aforementioned $85 million for legal provisions, compared to the previous year. Core operating income margin in constant currencies decreased by 0.1 percentage points; currency had a negative impact of 0.4 percentage points, resulting in a net decrease of 0.5 percentage points to 16.8% of net sales.

Core gross margin decreased by 1.0 percentage points (cc) as a result of the very high-margin US authorized generic sales of valsartan HCT in the prior year. Marketing & Sales expenses as a percentage of net sales increased by 0.4 percentage points (cc), driven by investments into strongly growing businesses in emerging markets. R&D expenses decreased by 0.1 percentage points (cc) as overall investments grew slower than sales, despite the continued ramp-up of investments into biosimilars and respiratory pipeline products. General & Administration expenses increased by 0.1 percentage points (cc). Other Income and Expense, net improved margin by 1.3 percentage points (cc) due to lower litigation costs and legal settlements in 2013 and restructuring costs in the prior year.

Vaccines and Diagnostics

Operating loss was $165 million, $85 million less than the $250 million operating loss in 2012. Adjustments to arrive at core operating loss amounted to $230 million, including $222 million for the amortization of intangible assets. This compares to adjustments of $175 million in 2012, which benefited from an exceptional licensing settlement of $56 million.

Core operating income was $65 million compared to a loss of $75 million for the prior period. This improvement was mainly driven by the impact of strong sales and higher other revenues.

Consumer Health

Consumer Health, which is continuing to recover from supply disruption in 2012, reported operating income of $178 million compared to $48 million in the prior-year period, driven by gross margin from incremental sales and higher income from minor divestments, partially offset by commercial investment behind re-launches and Lincoln restructuring expenses in the first quarter of 2013. Operating income margin in constant currencies increased by 3.4 percentage points, and currency had a negative impact of 0.3 percentage points, resulting in a margin of 4.4% of net sales. Adjustments to arrive at core operating income for the year amounted to $120 million, consisting mainly of the amortization and impairment of intangible assets and Lincoln restructuring costs. Prior-year adjustments amounted to $111 million.

Core operating income increased 87% (+95% cc) to $298 million. Core operating income margin in constant currencies increased 3.4 percentage points; currency had a negative impact of 0.4 percentage points, resulting in a net increase of 3.0 percentage points to 7.3% of net sales.

Lower costs to upgrade quality at the Lincoln facility and higher revenues generated a core gross margin increase of 2.8 percentage points (cc). Marketing & Sales expenses as a percentage of net sales increased by 0.1 percentage points (cc) behind investments to support the re-launch of products as well as investments into key brands and Emerging Growth Markets. R&D expenses decreased by 0.4 percentage points (cc), and General & Administration expenses increased by 0.5 percentage points (cc). Other Income and Expense, net increased core operating income margin by 0.8 percentage points (cc).

Corporate Income and Expense, Net

Corporate income and expense amounted to a net expense of $739 million compared to $759 million in the prior-year period. Total adjustments of $103 million in both periods were mainly related to finance and IT transformation costs, which were partly offset by the release of Corporate provisions of $75 million in 2013 and in 2012 by the exceptional gain of $51 million from the sale of financial assets.

Non-operating Income and Expense

	Year ended Dec 31, 2013	Restated Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Operating income	**10,910**	**11,193**[1]	**(3)**	**5**
Income from associated companies	600	552	9	9
Interest expense	(683)	(724)	6	6
Other financial income and expense	(92)	(96)	4	30
Income before taxes	**10,735**	**10,925**	**(2)**	**6**
Taxes	(1,443)	(1,542)	6	(1)
Net income	**9,292**	**9,383**	**(1)**	**7**
Attributable to:				
Shareholders of Novartis AG	*9,175*	*9,270*	*(1)*	*7*
Non-controlling interests	*117*	*113*	*4*	*4*
Basic EPS ($)	**3.76**	**3.83**	**(2)**	**6**

(1) Other income and Other expense included in operating income have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

Core Non-operating Income and Expense

	Year ended Dec 31, 2013	Restated Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Core operating income	**14,485**	**14,842**[1]	**(2)**	**3**
Income from associated companies	877	755	16	16
Interest expense	(683)	(724)	6	6
Other financial income and expense	(48)	(96)	50	30
Core income before taxes	**14,631**	**14,777**	**(1)**	**4**
Taxes	(2,098)	(2,201)	5	0
Core net income	**12,533**	**12,576**	**0**	**5**
Attributable to:				
Shareholders of Novartis AG	*12,416*	*12,463*	*0*	*5*
Non-controlling interests	*117*	*113*	*4*	*4*
Core basic EPS ($)	**5.09**	**5.15**	**(1)**	**4**

(1) Other income and Other expense included in core operating income have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

INCOME FROM ASSOCIATED COMPANIES

The income from associated companies increased from $552 million in 2012 to $600 million in 2013. The increase was primarily due to an estimated higher net result of Roche AG.

The following is a summary of the individual components included in the income from associated companies:

	2013	2012
	$ m	$ m
Novartis share of Roche's estimated current-year consolidated net income	817	709
Prior-year adjustment	(59)	(18)
Amortization of additional intangible assets recognized by Novartis on initial accounting for the equity interest	(154)	(153)
Net income effect from Roche	**604**	**538**
Net (loss)/income from other associated companies	**(4)**	**14**
Income from associated companies	**600**	**552**

The Group's 33.3% interest in Roche's voting shares, which represents a 6.3% interest in Roche's total equity, generated income of $604 million in 2013, up from $538 million in 2012. The 2013 contribution reflects an estimated $817 million share of Roche's net income in 2013. This contribution, however, was reduced by a prior year adjustment of $59 million based on the Roche 2012 results published after the 2012 Novartis consolidated financial statements and $154 million for the amortization of intangible assets arising from the allocation to intangible assets of the purchase price paid by Novartis for this investment in Roche. A survey of analyst estimates is used to estimate the Group's share of net income in Roche. Any differences between these estimates and actual results will be adjusted in the 2014 consolidated financial statements.

Adjusting for the exceptional items in both years, core income from associated companies increased 16% from $755 million to $877 million.

Interest Expense and other financial income/expense

Interest expense decreased to $683 million in 2013 from $724 million in 2012. Slightly higher interest expenses were more than offset by lower charges from the unwinding of discounted liabilities. Other financial income and expense amounted to a net expense of $92 million compared to $96 million in 2012 mainly due to lower currency losses.

Taxes

The tax rate (taxes as percentage of pre-tax income) decreased to 13.4% in 2013 from 14.1% in 2012 due to lower profit before tax in higher tax jurisdictions.

The core tax rate (taxes as a percentage of core pre-tax income) was 14.3% in 2013, down from 14.9% in 2012.

For further information on the main elements contributing to the difference, see "—Core Results" below and "Item 18. Financial Statements—Note 6".

2012 Compared to 2011

Key Figures

	Restated Year ended Dec 31, 2012[1]	Restated Year ended Dec 31, 2011[1]	Change in $	Change in constant currencies
	$ m	$ m	%	%
Net sales	**56,673**	**58,566**	**(3)**	**0**
Other revenues	888	809	10	11
Cost of goods sold	(18,756)	(18,983)	1	(2)
Gross profit	**38,805**	**40,392**	**(4)**	**(1)**
Marketing & Sales	(14,353)	(15,079)	5	1
Research & Development	(9,332)	(9,583)	3	0
General & Administration	(2,937)	(2,970)	1	(3)
Other income	1,049	1,192	(12)	(4)
Other expense	(2,039)	(3,172)	36	33
Operating income	**11,193**	**10,780**	**4**	**7**
Income from associated companies	552	528	5	5
Interest expense	(724)	(751)	4	1
Other financial income and expense	(96)	(2)	nm	nm
Income before taxes	**10,925**	**10,555**	**4**	**7**
Taxes	(1,542)	(1,483)	(4)	(6)
Net income	**9,383**	**9,072**	**3**	**7**
Attributable to:				
Shareholders of Novartis AG	*9,270*	*8,940*	*4*	*7*
Non-controlling interests	*113*	*132*	*(14)*	*(14)*
Basic earnings per share ($)	**3.83**	**3.75**	**2**	**5**
Free cash flow	**11,383**	**12,503**	**(9)**	

nm = not meaningful

(1) In 2012 Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements—Note 30").

Core Key Figures

	Restated Year ended Dec 31, 2012[1]	Restated Year ended Dec 31, 2011[1]	Change in $	Change in constant currencies
	$ m	$ m	%	%
Core gross profit	**41,847**	**43,839**	**(5)**	**(2)**
Marketing & Sales	(14,352)	(15,077)	5	1
Research & Development	(9,116)	(9,239)	1	(2)
General & Administration	(2,923)	(2,957)	1	(3)
Other income	675	281	140	164
Other expense	(1,289)	(1,156)	(12)	(20)
Core operating income	**14,842**	**15,691**	**(5)**	**(3)**
Core net income	**12,576**	**13,317**	**(6)**	**(3)**
Core basic earnings per share ($)	**5.15**	**5.50**	**(6)**	**(4)**

(1) In 2012 Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements—Note 30").

Group Overview

Net sales amounted to $56.7 billion (−3%, 0% cc), as growth in recently launched products (products launched since 2007, except Sandoz products launched in last 24 months) absorbed patent expiries. Currency depressed results by 3 percentage points as a result of the strengthening of the dollar against most currencies.

Across the Group's diversified healthcare portfolio, recently launched products continued to perform strongly and in 2012 comprised 29% of Group net sales, up from 25% a year ago.

Operating income increased 5% (+8% cc) to $11.5 billion. The strengthening of the US dollar resulted in a negative currency impact of 3 percentage points. Cost of goods sold decreased by 1% (+2% cc) to $18.8 billion in 2012, but represented an increase of 0.7 percentage points to 33.1% of net sales. This led to a reduction in the gross margin by 0.5 percentage points (cc) to 68.5%. Marketing & Sales expenses decreased 5% (−1% cc) to $14.4 billion, improving 0.4 percentage points to 25.3% of net sales, as productivity improvements and changes in the portfolio mix were partly offset by investments in new launch products. R&D expenses decreased by 3% (0% cc) in 2012 to $9.3 billion. This included $109 million in impairments of intangible assets. General & Administration expenses decreased by 1% (+3% cc) to $2.9 billion. Other income was down 12% (−6% cc) to $1.2 billion and largely consisted of a *Tekturna*/*Rasilez* provision reduction, divestment gains and restructuring provision releases. Other expense was down 40% (−37% cc) to $1.9 billion and included acquisition-related charges and restructuring costs.

In 2012, the adjustments made to Group operating income to arrive at core operating income amounted to $3.6 billion (2011: $4.9 billion). These adjustments included the amortization of intangible assets of $2.9 billion (2011: $3.0 billion) and exceptional net expense of $773 million (2011: $1.9 billion).

The significant exceptional expense items, net, in 2012 were $149 million for a United States restructuring in Pharmaceuticals and $265 million of Alcon integration costs, which were offset by exceptional gains of $472 million. The previous year benefited from exceptional product divestment and other gains of $1.0 billion, offset by a number of exceptional expense items totaling $2.9 billion, principally the *Tekturna*/*Rasilez*-related impairment and other charges of $903 million, restructuring charges of $487 million and a legal settlement of $204 million.

Group core operating income, which excludes exceptional items and amortization of intangible assets, decreased 5% (−2% cc) to $15.2 billion. Core operating income margin in constant currencies decreased by 0.7 percentage points. A positive currency impact of 0.2 percentage points resulted in a core operating income margin of 26.7% of net sales.

Group net income increased 4% (+7% cc) to $9.6 billion following the increase in operating income. EPS increased 3% (+6% cc) to $3.93 from $3.83 in the prior year.

Group core net income was down 5% (−3% cc) to $12.8 billion, in line with core operating income. Core EPS declined 6% (−3% cc) to $5.25.

Free cash flow of $11.4 billion was $1.1 billion lower than the prior year mainly on account of higher investments in property, plant and equipment as well as in intangible and other non-current assets and lower proceeds from the sale of non-current assets which amounted to $0.5 billion in the current period compared to $0.8 billion in the previous year.

Net Sales by Segments

	Year ended Dec 31, 2012	Year ended Dec 31, 2011	Change in $	Change in constant currencies
	$ m	$ m	%	%
Pharmaceuticals	32,153	32,508	(1)	2
Alcon	10,225	9,958	3	5
Sandoz	8,702	9,473	(8)	(4)
Vaccines and Diagnostics	1,858	1,996	(7)	(4)
Consumer Health	3,735	4,631	(19)	(16)
Net sales	56,673	58,566	(3)	0

	Year ended Dec 31, 2012	Year ended Dec 31, 2011	Change in $	Change in constant currencies
	$ m	$ m	%	%
Established Markets*	42,834	44,774	(4)	(2)
Emerging Growth Markets*	13,839	13,792	0	6
Net Sales	56,673	58,566	(3)	0

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

Pharmaceuticals

Net sales were $32.2 billion (−1%, +2% cc), driven by 8 percentage points of volume growth, partially offset in constant currencies by the negative impact of generic competition ($1.9 billion, −6 percentage points) and slightly negative pricing. Recently launched major products (products launched since 2007, including *Lucentis, Tasigna, Exjade, Sebivo/Tyzeka, Exforge, Galvus, Aclasta/Reclast, Cubicin, Exelon* Patch, *Afinitor/Votubia, Tekturna/Rasilez, Onbrez, Gilenya, Fanapt* and *Ilaris*) contributed $11.4 billion or 35% of net sales for the division, compared to 28% in 2011.

Regionally, Europe ($10.2 billion, −5% cc) saw a strong performance of recently launched products but was impacted by generic competition, mainly for *Diovan*, and by negative price effects. Performance in the United States ($10.4 billion, +4% cc) benefited from robust growth for *Tasigna*, *Gilenya* and *Afinitor*, and was only partly impacted by generic competition to *Diovan* ($2.1 billion, −11% cc), as no generic competitor to *Diovan* mono-substance was approved in the United States by the end of 2012 (while the combination product, *Diovan HCT,* faced competition from a single generic competitor holding 180-day exclusivity and from Sandoz with an authorized generic). Japan's performance ($4.0 billion, +3% cc) improved versus 2011 due to new launches which more than offset the biennial price cut. Latin America and Canada ($3.1 billion, +9% cc) achieved strong growth rates fueled by new product launches despite the *Diovan* generic impact in Canada. Emerging Growth Markets ($7.4 billion, +6% cc) were driven by double-digit growth in China and India.

TOP 20 PHARMACEUTICALS DIVISION PRODUCT NET SALES—2012

Brands	Business franchise	Indication	Net sales United States	Change in constant currencies	Net sales Rest of world	Change in constant currencies	Total net sales	Change in $	Change in constant currencies
			$ m	%	$ m	%	$ m	%	%
Gleevec*/*Glivec	Oncology	Chronic myeloid leukemia	1,698	16	2,977	(2)	**4,675**	**0**	**4**
Diovan*/*Co*—*Diovan	Primary care	Hypertension	2,087	(11)	2,330	(28)	**4,417**	**(22)**	**(21)**
Lucentis	Ophthalmics	Age-related macular degeneration			2,398	22	**2,398**	**17**	**22**
Sandostatin	Oncology	Acromegaly	649	13	863	5	**1,512**	**5**	**8**
Exforge	Primary care	Hypertension	358	10	994	18	**1,352**	**12**	**16**
Zometa	Oncology	Cancer complications	561	(13)	727	(10)	**1,288**	**(13)**	**(11)**
Gilenya	Neuroscience	Relapsing multiple sclerosis	727	90	468	nm	**1,195**	**142**	**147**
***Exelon*/*Exelon* Patch**	Neuroscience	Alzheimer's disease	428	14	622	(4)	**1,050**	**(2)**	**2**
Tasigna	Oncology	Chronic myeloid leukemia	351	38	647	47	**998**	**39**	**44**
Galvus	Primary care	Diabetes			910	43	**910**	**34**	**43**
Exjade	Oncology	Iron chelator	251	(3)	619	11	**870**	**2**	**7**
Neoral*/*Sandimmun	Integrated Hospital Care	Transplantation	64	(10)	757	(6)	**821**	**(9)**	**(6)**
Afinitor*/*Votubia	Oncology	Breast cancer	412	142	385	49	**797**	**80**	**85**
***Voltaren* (excl. other divisions)**	Additional products	Inflammation/pain	1	(75)	758	1	**759**	**(4)**	**0**
Reclast*/*Aclasta	Established medicines	Osteoporosis	354	(8)	236	9	**590**	**(4)**	**(2)**
Myfortic	Integrated Hospital Care	Transplantation	239	20	340	14	**579**	**12**	**16**
Ritalin*/*Focalin	Additional products	Attention deficit/ hyperactivity disorder	402	1	152	8	**554**	**1**	**3**
Comtan*/*Stalevo	Neuroscience	Parkinson's disease	147	(31)	383	0	**530**	**(14)**	**(11)**
Xolair	Critical Care	Asthma			504	15	**504**	**5**	**12**
Femara	Oncology	Breast cancer	22	(90)	416	(37)	**438**	**(52)**	**(50)**
Top 20 products total			**8,751**	**6**	**17,486**	**3**	**26,237**	**0**	**4**
Rest of portfolio			1,641	(3)	4,275	(5)	**5,916**	**(7)**	**(4)**
Total Division sales			**10,392**	**4**	**21,761**	**1**	**32,153**	**(1)**	**2**

nm = not meaningful

Pharmaceuticals Division Product Highlights—Leading Products

Net sales growth data below refer to 2012 worldwide performance. Growth rates are not provided for some recently launched products since they are not meaningful.

Gleevec/*Glivec* ($4.7 billion, +4% cc) continued to grow as a treatment for adult patients with metastatic and/or unresectable KIT+ gastrointestinal stromal tumors (GIST), as an adjuvant treatment for certain adult patients following resection of KIT+ GIST, and as a targeted therapy for Philadelphia

chromosome-positive chronic myeloid leukemia (Ph+ CML). Our Bcr-Abl franchise, which consists of *Gleevec*/*Glivec* and *Tasigna*, grew strongly in 2012, reaching net sales of $5.7 billion (+9% cc).

Diovan Group ($4.4 billion, −21% cc), consisting of mono-substance *Diovan* and combination product *Diovan HCT*, saw worldwide sales decline due to the loss of exclusivity of both products in the European Union, Canada and the United States. Performance was sustained in key Emerging Growth Markets such as China, as well as select countries in Latin America, Asia Pacific, Middle East and Africa.

Lucentis ($2.4 billion, +22% cc) grew strongly as the only anti-VEGF therapy licensed in many countries for three ocular indications: wet age-related macular degeneration (wet AMD), visual impairment due to diabetic macular edema (DME), and visual impairment due to macular edema secondary to retinal vein occlusion (RVO). In wet AMD, *Lucentis* is approved in more than 100 countries and individualized treatment consistent with its EU label is the standard of care. *Lucentis* is approved for the treatment of visual impairment due to DME and visual impairment due to macular edema secondary to RVO in more than 80 countries. In September and October of 2012, we filed regulatory submissions in the European Union and Japan for *Lucentis* as a treatment for visual impairment due to choroidal neovascularization secondary to pathological myopia. Genentech/Roche holds the rights to *Lucentis* in the United States.

Sandostatin ($1.5 billion, +8% cc), a somatostatin analogue used as a treatment for patients with functional gastroenteropancreatic tumors as well as acromegaly, continued to benefit from increasing use of *Sandostatin LAR* in key markets. A new presentation of *Sandostatin LAR*, which includes an enhanced diluent, safety needle and vial adapter, has been approved in 26 countries to date with additional filings underway. *Sandostatin* is also approved in more than 39 countries for the delay of disease progression in patients with advanced neuroendocrine tumors of the midgut or unknown primary tumor location.

Exforge Group ($1.4 billion, +16% cc), which includes *Exforge* and *Exforge HCT*, continued to grow at a solid double-digit rate, fueled by continued demand in the United States, Asia Pacific and Middle East, as well as ongoing *Exforge HCT* launches in Asia and Latin America. *Exforge* delivered double-digit growth globally and is now available for patients in more than 100 countries. *Exforge HCT*, which consists of *Exforge* with a diuretic in a single pill, is now available in over 60 countries.

Zometa ($1.3 billion, −11% cc), which is used in an oncology setting to reduce or delay skeletal-related events in patients with bone metastases from solid tumors and multiple myeloma, declined as anticipated in 2012 due to competition.

Gilenya ($1.2 billion, +147% cc) continued to show rapid growth as the first once-daily oral therapy approved for relapsing remitting and/or relapsing forms of multiple sclerosis (MS and RRMS) in adult patients, and achieved blockbuster status in 2012 with $1.2 billion in annual sales. *Gilenya* is indicated in the United States for relapsing forms of MS, and in the European Union for adult patients with highly active RRMS, defined as either high disease activity despite treatment with beta interferon, or rapidly evolving severe RRMS. As of December 2012, there are approximately 56,000 patients who have been treated with *Gilenya* in clinical trials and in a post-marketing setting, and approximately 62,000 patient years of exposure. In April 2012, following completion of their safety reviews, the FDA and EMA both confirmed the positive benefit-risk profile of *Gilenya* when used in accordance with updated product information, which for both regions includes additional requirements (such as blood pressure monitoring and electrocardiograms) for the existing six-hour observation period following the first dose and more specific guidance on patient selection parameters to aid in the identification of patients suitable for *Gilenya* treatment. In particular situations, it is recommended that the first dose monitoring period be extended. *Gilenya* is currently approved in over 65 countries around the world, and is licensed from Mitsubishi Tanabe Pharma Corporation.

Exelon/*Exelon* Patch ($1.1 billion, +2% cc) combined sales increased slightly in 2012 as a therapy for mild-to-moderate forms of Alzheimer's disease dementia as well as dementia linked with Parkinson's disease. *Exelon* Patch, the novel transdermal form of the medicine launched in 2007 and now available in

more than 80 countries worldwide, generated the majority of the sales. In August 2012, the FDA approved a higher dose of *Exelon* Patch for the treatment of people with mild-to-moderate Alzheimer's disease and mild to moderate Parkinson's disease dementia. In November 2012, CHMP issued a positive opinion for the approval of the higher dose of *Exelon* Patch for the treatment of patients with mild-to-moderately severe Alzheimer's disease in Europe.

Tasigna ($1.0 billion, +44% cc) grew rapidly as a more effective, targeted therapy for certain adult patients with Ph+ CML. It is currently approved as first-line therapy for newly diagnosed patients with Ph+ CML in the chronic phase in more than 80 countries globally, including the United States, European Union, Japan and Switzerland, with additional submissions pending worldwide. *Tasigna* is also approved in more than 100 countries as a second-line treatment for patients with Ph+ CML in chronic and/or accelerated phase who are resistant or intolerant to existing treatment, such as *Gleevec*/*Glivec. Tasigna* market share continues to rise in both the first-line and second-line settings. This product is part of our Bcr-Abl franchise with net sales of $5.7 billion, (+9% cc), which also includes *Gleevec*/*Glivec*.

Galvus Group ($910 million, +43% cc), which includes *Galvus* (vildagliptin), an oral treatment for type 2 diabetes, and *Eucreas*, a single-pill combination of vildagliptin and metformin, delivered strong growth in key markets, particularly in Europe, Japan, Latin America and Asia Pacific. Performance was driven by a continued focus on patients whose diabetes remains uncontrolled on metformin, as well as an expansion of usage in new patient segments based on new indications. *Galvus* is currently approved in more than 100 countries. *Eucreas* was the first single-pill combining a DPP-4 inhibitor and metformin to be launched in Europe and is currently approved in more than 85 countries.

Exjade ($870 million, +7% cc), a once-daily oral therapy for blood transfusion iron overload approved in more than 100 countries, saw steady sales growth as a decline in the United States was more than offset by growth in Europe, Latin America, Canada and Japan. Worldwide regulatory filings are underway and the EMA has approved *Exjade* as a treatment for patients with non-transfusion-dependent thalassemia syndromes, a diverse group of genetic disorders that cause anemia, with a first approval achieved in Canada.

Neoral/*Sandimmun* ($821 million, −6% cc), an immunosuppressant primarily used to prevent organ rejection following a kidney, liver or heart transplant, experienced only modestly declining sales, despite ongoing generic competition, due to its pharmacokinetic profile, reliability and use in treating a life-threatening condition. *Neoral* is also approved for use in lung transplant patients in many countries outside the United States, and is also indicated for treatment of select autoimmune disorders such as psoriasis and rheumatoid arthritis. *Neoral* is marketed in approximately 100 countries.

Afinitor/*Votubia* ($797 million, +85% cc), an oral inhibitor of the mTOR pathway, accelerated its strong growth trajectory in 2012 following FDA and EMA approvals in HR+/HER2- advanced breast cancer. Everolimus, the active ingredient in *Afinitor*/*Votubia*, was also approved in the United States as *Afinitor* and in the European Union as *Votubia* for the treatment of adult patients with renal angiomyolipomas and subependymal giant cell astrocytomas (SEGAs) associated with tuberous sclerosis complex who do not require immediate surgery. The FDA also granted approval for a new formulation, *Afinitor Disperz* tablets, for patients with SEGAs. *Afinitor*/*Votubia* is now approved in five indications in the United States and four in the European Union. Everolimus is available under the trade names *Zortress*/*Certican* for use in other non-oncology indications and is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Voltaren/*Cataflam* ($759 million, 0% cc), a leading non-steroidal anti-inflammatory drug available in more than 140 countries, saw stable sales as competition was offset by continued growth in regions such as Latin America, the Middle East, Africa and Asia based on long-term trust in the brand. Indicated for the relief of symptoms in rheumatic diseases like rheumatoid arthritis and osteoarthritis, and for various other inflammatory and pain conditions, *Voltaren*/*Cataflam* is marketed by the Pharmaceuticals Division in a

wide variety of dosage forms. In addition, in various countries, our OTC Division markets low-dose oral forms and the topical therapy of *Voltaren* as over-the-counter products.

Reclast/*Aclasta* ($590 million, −2% cc), a once-yearly bisphosphonate infusion for the treatment of certain forms of osteoporosis and Paget's disease of the bone, saw sales decline slightly in 2012. Sold as *Reclast* in the United States and *Aclasta* in the rest of the world, the product is approved in more than 100 countries for up to six indications. It is also the only bisphosphonate approved to reduce the incidence of fractures at all three key fracture sites (hip, spine and non-spine) in the treatment of postmenopausal osteoporosis. Zoledronic acid, the active ingredient in *Reclast*/*Aclasta*, is also approved in a number of countries in a different dosage under the trade name *Zometa* for certain oncology indications.

Myfortic ($579 million, +16% cc), a transplantation medicine, continued to grow as a treatment for the prevention of acute rejection of kidney allografts. It is approved for this indication, in combination with cyclosporine and corticosteroids, in more than 90 countries.

Ritalin/*Focalin* ($554 million, +3% cc) continued to grow as a treatment for attention deficit hyperactivity disorder (ADHD) in children. *Ritalin* and *Ritalin LA* are available in more than 70 and 30 countries, respectively, and are also indicated for narcolepsy. *Focalin* and *Focalin XR* are available in the United States, and *Focalin XR,* which is additionally indicated for adults, is also approved in Switzerland. Immediate release *Focalin* is subject to generic competition.

Comtan/*Stalevo* ($530 million, −11% cc), indicated for the treatment of Parkinson's disease, saw sales decline in 2012 due to generic competition in some markets. *Stalevo* (carbidopa, levodopa and entacapone) is indicated for certain Parkinson's disease patients who experience end-of-dose motor fluctuations, known as "wearing off". *Stalevo* is available in more than 50 countries. *Comtan* (entacapone) is also indicated for the treatment of Parkinson's disease patients who experience end-of-dose wearing off and is marketed in approximately 50 countries. Both products are marketed by Novartis under a licensing agreement with the Orion Corporation.

Xolair ($504 million, +12% cc), a biologic drug for severe persistent allergic asthma in Europe and moderate-to-severe persistent allergic asthma in the United States, is now approved in more than 90 countries and continued to grow strongly in Europe, Japan, Canada and Latin America. Novartis co-promotes *Xolair* with Genentech/Roche in the United States and shares a portion of operating income, but does not book United States sales. A Phase III trial is progressing to support registration in China. Omalizumab, the active ingredient in *Xolair*, is also in Phase III development for the treatment of a debilitating skin disease called chronic idiopathic urticaria, with regulatory filing planned in 2013.

Femara ($438 million, −50% cc), a treatment for early stage and advanced breast cancer in postmenopausal women, experienced a decline in sales due to multiple generic entries in the United States, Europe and other key markets.

Other Products of Significance

Tekturna/*Rasilez* ($383 million, −29% cc) sales declined following label updates in the European Union, United States and Japan. The label updates followed our decision in December 2011 to halt the ALTITUDE study. Patient safety is the highest priority for Novartis and we are sharing the end-of-treatment results which confirmed the preliminary findings with health authorities worldwide as required. Novartis voluntarily ceased to market *Valturna*, a single-pill combination containing aliskiren and valsartan, in the United States as of July 2012.

TOBI ($317 million, +9% cc) sales, including both *TOBI* nebulizer solution and *TOBI Podhaler* formulations of the antibiotic tobramycin, continued to grow with *TOBI Podhaler* capturing 13% of total sales in 2012. Both products are used for the management of Pseudomonas aeruginosa infection in cystic fibrosis patients aged six years and older. *TOBI Podhaler*, approved in the European Union, Canada, Switzerland and other countries can be delivered using a portable, pocket-sized inhaler that reduces

administration time by approximately 70% relative to *TOBI*. In the United States, Novartis has responded to the FDA's October 2012 Complete Response Letter for *TOBI Podhaler* (the provisional US trade name) in October 2012 and anticipates an FDA action in the middle of 2013. An FDA Advisory Committee previously voted 13 to 1 that there was adequate evidence of efficacy and safety to support its use in the proposed indication.

Zortress/*Certican* ($210 million, +20% cc), a transplantation medicine available in more than 90 countries to prevent organ rejection in adult heart and kidney transplant patients, continued to generate robust growth. It is also approved to prevent organ rejection for liver transplant patients in the European Union (as of October 2012), Argentina, Chile and Philippines. Everolimus, the active ingredient in *Zortress*/*Certican*, is marketed for other indications under the trade names *Afinitor*/*Votubia*. Everolimus is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Extavia ($159 million, +9% cc), the Novartis-branded version of Betaferon®/Betaseron® (interferon beta-1b) for relapsing forms of MS, continued to grow in key markets. *Extavia* is available in more than 35 countries, including the United States.

Arcapta Neohaler/*Onbrez Breezhaler* ($134 million, +39% cc) continued to grow strongly worldwide as a once-daily long-acting $beta_2$-agonist (LABA) for the maintenance bronchodilator treatment of airflow obstruction in adult patients with chronic obstructive pulmonary disease (COPD). Indacaterol, the active ingredient in *Arcapta Neohaler*/*Onbrez Breezhaler,* is now approved in more than 90 countries.

Ilaris ($72 million, +56% cc) showed strong growth as a treatment for adults and children suffering from cryopyrin-associated periodic syndrome (CAPS), a group of rare disorders characterized by chronic recurrent fever, urticaria, occasional arthritis, deafness, and potentially life threatening amyloidosis. *Ilaris* is approved for the treatment of CAPS in over 60 countries.

In January 2013, the CHMP of the EMA has adopted a positive opinion of *Ilaris* (canakinumab) for the treatment of patients whose acute gouty arthritis cannot be managed with standard of care. Approval by the European Commission is expected in the first half of 2013.

Jakavi ($30 million) sales grew as an oral inhibitor of the JAK 1 and JAK 2 tyrosine kinases and was approved in the European Union and Canada in the second half of 2012 for the treatment of disease-related splenomegaly or symptoms in adult patients with primary myelofibrosis (also known as chronic idiopathic myelofibrosis), post-polycythemia vera myelofibrosis or post-essential thrombocythemia myelofibrosis. *Jakavi* is available in 31 countries with additional worldwide regulatory filings underway. Incyte holds the rights for *Jakavi* in the United States where it is sold as Jakavi®.

Alcon

Net sales rose 3% (+5% cc) to $10.2 billion, driven by sales growth in Surgical (+5%, +8% cc), Ophthalmic Pharmaceuticals (+2%, +5% cc), and Vision Care (+1%, +4% cc) compared to the prior year.

Surgical sales growth was led by robust sales of Cataract, Vitreoretinal and Refractive equipment, advanced technology IOLs and procedural growth in Emerging Growth Markets. Ophthalmic Pharmaceuticals sales benefited from growth of the *Systane* (Dry Eye), *Nevanac* (Inflammation) and *Durezol* (Inflammation) brands, as well as strong growth in combination glaucoma brands *DuoTrav* and *Azarga*. The Ophthalmic Pharmaceuticals performance was offset by sales of *Travatan* in the United States with the generic entry of latanoprost into the glaucoma category. Vision Care maintained its solid sales performance with growth of *Air Optix*, a strong launch uptake of *Dailies Total1* lenses in Europe, and modest growth in the lens care solution business.

Alcon Division net sales by product category:

	Year ended Dec 31, 2012	Year ended Dec 31, 2011	Change in $	Constant currencies change
	$ m	$ m	%	%
Surgical				
Cataract products	2,932	2,858	3	6
of which cataract IOLs	*1,281*	*1,276*	*0*	*4*
Vitreoretinal products	578	529	9	12
Refractive/other	242	200	21	24
Total	**3,752**	**3,587**	**5**	**8**
Ophthalmic Pharmaceuticals				
Glaucoma	1,259	1,287	(2)	1
Allergy/otic/nasal	901	884	2	3
Infection/inflammation	1,011	967	5	8
Dry eye/other	848	810	5	8
Total	**4,019**	**3,948**	**2**	**5**
Vision Care				
Contact lenses	1,732	1,701	2	5
Contact lens care	722	722	0	2
Total	**2,454**	**2,423**	**1**	**4**
Total net sales	**10,225**	**9,958**	**3**	**5**

Alcon Division Franchise Highlights

Net sales growth data below refer to 2012 worldwide performance.

Surgical

In 2012, global Surgical net sales were $3.8 billion, up 5% (+8% cc) over the previous year. Advanced technology IOLs showed continued strong growth of 13% (+16% cc), led by *AcrySof IQ Toric.* The launch of the *AcrySof IQ ReSTOR +2.5D Multifocal IOL* and *AcrySof IQ ReSTOR +2.5D Multifocal Toric IOL* in Europe also contributed to growth.

Global sales of *LenSx* femtosecond cataract refractive lasers grew 234% (cc), continued global launches contributing to strong *LenSx* uptake. *LenSx* lasers have now been installed or shipped to more than 40 markets and more than 1,000 surgeons have been trained to use this innovative technology. In addition, the *LenSx SoftFit* Patient Interface, Alcon's latest *LenSx* laser platform, was launched in the United States for use during cataract surgery.

Surgical also experienced growth in the Vitreoretinal category, driven by sales of *Constellation* equipment, which grew 28% (cc) in markets outside the United States. The Refractive/Other segment also grew, driven by *Wavelight FS200* and *EX500* product launches, offering faster treatment times during refractive surgery.

Ophthalmic Pharmaceuticals

Global net sales of Ophthalmic Pharmaceuticals products increased by 2% (+5% cc) in 2012, driven by non-US glaucoma product sales, inflammation products *Durezol* and *Nevanac*, and the *Systane* dry eye portfolio. *Travatan/DuoTrav* solution sales in glaucoma grew by 12% (cc) in markets outside the United

States, offset by the impact of generic competition in the United States. Infection/Inflammation product sales grew 10% (cc), led by strong growth of the *Durezol* emulsion and *Nevanac* ophthalmic suspension. *Systane Ultra* and *Systane Balance* were key growth drivers in the Dry Eye segment in Europe, Latin America, the Caribbean, Canada and Asia, with total product portfolio growth of 10% (cc).

Further strengthening growth prospects for Ophthalmic Pharmaceuticals, Alcon received FDA approval for *Durezol* to treat uveitis in 2012. Originally indicated for use as an anti-inflammatory post-surgery, this additional indication will treat inflammation in the uvea near the middle of the eye. *Nevanac* received EU approval for the indication of post-surgical macular edema to treat the inflammatory response in the retina following cataract surgery. In addition, FDA approval was received for *Nepafenac* ophthalmic suspension 0.3% for the treatment of pain and inflammation associated with cataract surgery. Alcon expanded its pharmaceutical offering by entering into a strategic licensing agreement with ThromboGenics to commercialize *Jetrea* (ocriplasmin) outside the United States. Ocriplasmin, which received a positive CHMP opinion in January 2013, may become the first pharmaceutical treatment for vitreomacular traction and macular hole in Europe. In October 2012, *Jetrea* was approved by the FDA.

Vision Care

The Vision Care business continued to grow, with global net sales up 1% (+4% cc, with 5% cc growth in contact lenses and 2% cc growth in lens care products) versus prior year. This growth was driven by the United States and Japan, as well as the continued strong performance of the *Air Optix* portfolio, which leads the marketplace in the multifocal segment and achieved 19% (cc) growth in 2012. Alcon also saw strong *Dailies* growth in the United States, up 14% (cc) over the previous year. *Dailies Total1*, the industry's first and only water gradient contact lens, was launched in Germany, Austria, Italy and France, gaining new users and market share in the silicone hydrogel daily disposable category, and was also approved in the United States and Japan. In lens care, Alcon achieved 10% (cc) growth of the *Clear Care* disinfecting solution.

Sandoz

Sandoz net sales decreased by 8% (−4% cc) in 2012 to $8.7 billion as a result of declines in the United States retail generics and biosimilars (−17% cc) and Germany (−7% cc), partly offset by double-digit sales growth in biosimilars (+36%), the rest of Western Europe (+10% cc) and Asia (+17% cc). Total sales volume decreased 1 percentage point and price erosion was 5 percentage points primarily due to increased competition on United States sales of enoxaparin ($451 million in 2012 compared to $1.0 billion in 2011). Fougera contributed 2 additional percentage points of growth from the inclusion of approximately five months of sales in 2012.

Vaccines and Diagnostics

Net sales were $1.9 billion (−7%, −4% cc) in 2012 compared to $2.0 billion in 2011. 2011 was impacted by the release of bulk pediatric shipments that had been delayed from the fourth quarter of 2010 and a one-time pre-pandemic sale.

The growth of our Meningococcal franchise was underpinned by *Menveo*, which continues to gain market share both in the United States and in the rest of the world, with sales of over $164 million (+18% cc) in 2012.

Consumer Health

Consumer Health net sales declined 19% (−16% cc) mainly due to the impact of the suspension of production at the United States manufacturing site in Lincoln, Nebraska, where operations were suspended at the end of 2011 for quality upgrades and improvements.

OTC's net sales declined sharply versus the previous year primarily due to Lincoln. Also contributing to the sales decline was a weak cough-and-cold season in early 2012, as well as continued economic deterioration and government austerity measures in several European markets. Despite weak economic conditions, OTC gained market share in most European countries and is growing significantly ahead of the market in key Emerging Growth Markets, notably Russia and China. Increased advertising and promotion investments in growth brands like *Voltaren* and *Otrivin*, the launch of line extensions, and the improvement of commercial execution are the key drivers for these market share gains.

Animal Health reported a net sales decline as a result of limited sales of companion animal products manufactured at Lincoln. Excluding the Lincoln brands, Animal Health maintained strong single-digit growth. The United States continued to show strong momentum, delivering double-digit sales growth excluding the Lincoln brands, mainly driven by *Denagard*, *Atopica* and *Capstar*. Emerging Growth Markets posted high single-digit sales growth with particularly strong performances in China, India, Russia and Brazil.

Operating Income by Segments

	Restated Year ended Dec 31, 2012	% of net sales	Restated Year ended Dec 31, 2011	% of net sales	Change in $	Change in constant currencies
	$ m		$ m		%	%
Pharmaceuticals	**9,598**	**29.9**	**8,296**	**25.5**	**16**	**19**
Alcon	**1,465**	**14.3**	**1,472**	**14.8**	**0**	**6**
Sandoz	**1,091**	**12.5**	**1,422**	**15.0**	**(23)**	**(24)**
Vaccines and Diagnostics	**(250)**	**(13.5)**	**(249)**	**(12.5)**	**0**	**(13)**
Consumer Health	**48**	**1.3**	**727**	**15.7**	**(93)**	**(89)**
Corporate income & expenses, net	(759)[1]		(888)[1]		15	12
Operating income	**11,193**	**19.8**	**10,780**	**18.4**	**4**	**7**

(1) In 2012, Corporate income and expenses, net have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements—Note 30").

Core Operating Income by Segments

	Restated Year ended Dec 31, 2012	% of net sales	Restated Year ended Dec 31, 2011	% of net sales	Change in $	Change in constant currencies
	$ m		$ m		%	%
Pharmaceuticals	**10,213**	**31.8**	**10,040**	**30.9**	**2**	**5**
Alcon	**3,698**	**36.2**	**3,492**	**35.1**	**6**	**9**
Sandoz	**1,503**	**17.3**	**1,921**	**20.3**	**(22)**	**(21)**
Vaccines and Diagnostics	**(75)**	**(4.0)**	**135**	**6.8**	**nm**	**nm**
Consumer Health	**159**	**4.3**	**873**	**18.9**	**(82)**	**(78)**
Corporate income & expenses, net	(656)[1]		(770)[1]		15	12
Core operating income	**14,842**	**26.2**	**15,691**	**26.8**	**(5)**	**(3)**

nm= not meaningful

(1) In 2012, Corporate income and expenses, net have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements—Note 30").

Pharmaceuticals

Pharmaceuticals reported an operating income of $9.6 billion (+16%, +19% cc). The operating income margin increased by 4.3 percentage points (cc) with a positive currency impact of 0.1 percentage points resulting in an operating income margin of 29.9% of net sales.

Adjustments to arrive at core operating income amounted to $615 million, consisting of $322 million for the amortization of intangible assets, $238 million of impairments and $55 million of other exceptional charges. The prior year adjustments amounted to $1.7 billion, principally related to impairments and other charges of $903 million for *Tekturna*/*Rasilez* and restructuring charges of $420 million offset by a $334 million gain due to the divestment of Elidel®.

Core operating income was $10.2 billion (+2%, +5% cc). Constant currency core operating income margin improved by 0.7 percentage points due to continuing productivity efforts. Currency movements had a positive impact of 0.2 percentage points resulting in a core operating income margin of 31.8% of net sales. The underlying gross margin decreased by 1.1 percentage points (cc), mainly driven by royalties and product mix, while R&D expenses improved margin by 0.3 percentage points (cc). As a percentage of net sales, Marketing & Sales and General & Administration expenses improved operating income margin by 0.8 percentage points (cc). Other Income and Expense, net also improved margin by 0.7 percentage points (cc).

As shown below, Pharmaceuticals expensed $6.9 billion (on a core basis $6.7 billion) in research and development in 2012. This represented 21.5% (on a core basis 20.8%) of Pharmaceuticals' total net sales. Pharmaceuticals currently has 138 projects in clinical development.

Research and Exploratory Development expenditure was $2.6 billion in 2012, practically unchanged from the 2011 amount of $2.7 billion. Confirmatory Development expenditures in 2012 decreased by 5% to $4.3 billion as compared against 2011. This included $0.1 billion (2011: $0.3 billion) in impairments of intangible assets. On a core basis, Confirmatory Development expenditure remained unchanged at $4.2 billion in 2012 and represented 13.0% of net sales as in the prior year.

Pharmaceuticals Research and Development Expenditure

	2012	Core R&D 2012[1]	2011	Core R&D 2011[1]
	$ m	$ m	$ m	$ m
Research and Exploratory Development	2,584	2,530	2,676	2,625
Confirmatory Development	4,334	4,167	4,556	4,235
Total	**6,918**	**6,697**	**7,232**	**6,860**
% of Pharmaceuticals net sales	21.5%	20.8%	22.2%	21.1%

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

Alcon

Operating income of $1.5 billion (0%, +6% cc) included amortization of intangible assets of $1.9 billion and integration costs of $264 million, whereas 2011 included an exceptional income of $268 million.

Adjustments to arrive at core operating income amounted to $2.2 billion (2011: $2.0 billion), mainly driven by the amortization of intangible assets of $1.9 billion (2011: $1.9 billion).

Alcon increased core operating income to $3.7 billion (+6%, +9% cc), delivering strong operating leverage through productivity gains and the realization of merger-related cost synergies (2012: $297 million), while continuing to invest in Emerging Growth Markets and R&D. Core operating margin in constant currencies increased by 1.1 percentage points to 36.2% of net sales. Gross margin in constant currencies improved 0.4 percentage points to 74.6% of net sales driven by procurement savings and productivity initiatives. Marketing & Sales expenses, which represented 24.1% of net sales, improved by 1.4 percentage points (cc) due to synergies. General & Administration expenses improved 0.1 percentage points (cc) to 4.9% of net sales. Investments in R&D represented 9.1% of net sales, decreasing 0.4 percentage points (cc) from the prior year.

Sandoz

Operating income at Sandoz was $1.1 billion (−23%, −24% cc). The operating income margin fell by 3.1 percentage points in constant currencies, with a positive currency impact of 0.6 percentage points resulting in an operating income margin of 12.5% of net sales, as a result of enoxaparin-driven price erosion and continued investments into quality assurance and manufacturing as well as into the development of future biosimilar and respiratory products.

Adjustments to arrive at core operating income amounted to $412 million (2011: $499 million). These consist principally of amortization of intangible assets of $364 million (2011: $383 million) and costs related to the Fougera acquisition of $62 million. These were partly offset by a reduction of contingent consideration of $59 million related to a business combination (2011: $106 million) and lower legal settlement costs compared to prior year of $204 million.

Core operating income decreased by 22% (−21% cc) to $1.5 billion. The addition of the Fougera business contributed 1.0 percentage points (cc) to core operating income. Core operating income margin in constant currencies decreased by 3.7 percentage points, partly offset by a positive currency impact of 0.7 percentage points, resulting in a core operating income margin of 17.3% of net sales. Gross margin decreased by 0.9 percentage points (cc), driven primarily by continued investments in quality assurance and manufacturing. R&D expenses (−1.1 percentage points cc) increased as a result of development investments in biosimilars and respiratory products. As a percentage of net sales, Marketing & Sales expenses increased by 1.5 percentage points (cc) as a consequence of investments into growing businesses in biosimilars, Western Europe outside of Germany and Emerging Growth Markets. R&D expenses

increased by 1.1 percentage points (cc) as a result of our investments into our biosimilars and respiratory pipeline and General & Administration expenses increased by 0.2 percentage points (cc). Other Income and Expense, net was unchanged compared to 2011.

Vaccines and Diagnostics

Reported operating loss was $250 million (2011: $249 million loss) as a result of lower sales and the manufacturing ramp-up for upcoming launches of *Bexsero* and *Flucelvax*. 2012 included a licensing settlement benefit of $56 million, while 2011 included an impairment of $135 million related to a financial asset.

Core operating loss in 2012 was $75 million compared to a core operating income of $135 million in 2011.

Consumer Health

Consumer Health reported an operating income of $48 million versus a prior-year income of $727 million largely due to the impact of the suspension of production and quality upgrade investments at Lincoln, as well as higher income in 2011 from the divestment of OTC non-core brands.

The operating income margin declined 14.4 percentage points to 1.3% of net sales, including a negative currency impact of 0.6 percentage points. Core operating income declined 82% (−78% cc) to $159 million and core operating income margin declined 14.6 percentage points to 4.3% of net sales.

Gross margin decreased 9.4 percentage points (cc) mainly due to disruptions in supply, idle capacity charges at Lincoln as well as one-time quality upgrade investments at the manufacturing facility. As a percentage of net sales, Marketing & Sales expenses increased 2.4 percentage points (cc), R&D expenses increased 1.4 percentage points (cc) and General & Administration expenses increased 0.9 percentage points (cc) largely as a result of lower sales that more than offset the positive impact from cost savings programs. During 2012, both Consumer Health businesses continued to increase overall R&D spending to support their future pipelines and also increased Marketing & Sales spend into products and markets that were not affected by the supply shortage. Other Income and Expense, net increased by 0.1 percentage points (cc).

Corporate Income and Expense, Net

Corporate income and expense, which includes the cost of Group management and central services, amounted to a $759 million net expense, compared to $888 million in 2011, principally due to reductions in environmental, restructuring and other provisions and an exceptional gain of $51 million from the sale of financial assets. Taking into account 2012 core adjustments of $103 million, core corporate income and expense decreased to a net expense of $656 million (2011: $770 million).

Non-Operating Income and Expense

	Restated Year ended Dec 31, 2012	Restated Year ended Dec 31, 2011	Change in $	Change in constant currencies
	$ m	$ m	%	%
Operating income	**11,193**[1]	**10,780**[1]	**4**	**7**
Income from associated companies	552	528	5	5
Interest expense	(724)	(751)	4	1
Other financial income and expense	(96)	(2)	nm	nm
Income before taxes	**10,925**	**10,555**	**4**	**7**
Taxes	(1,542)	(1,483)	(4)	(6)
Net income	**9,383**	**9,072**	**3**	**7**
Attributable to:				
Shareholders of Novartis AG	*9,270*	*8,940*	*4*	*7*
Non-controlling interests	*113*	*132*	*(14)*	*(14)*
Basic EPS ($)	**3.83**	**3.75**	**2**	**4**

(1) In 2012, Other income and Other expense included in operating income have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

nm= not meaningful

Core Non-Operating Income and Expense

	Restated Year ended Dec 31, 2012	Restated Year ended Dec 31, 2011	Change in $	Change in constant currencies %
	$ m	$ m	%	%
Core operating income	**14,842**[1]	**15,691**[1]	**(5)**	**(3)**
Income from associated companies	755	779	(3)	(3)
Interest expense	(724)	(751)	4	1
Other financial income and expense	(96)	(2)	nm	nm
Core income before taxes	**14,777**	**15,717**	**(6)**	**(4)**
Taxes	(2,201)	(2,400)	8	7
Core net income	**12,576**	**13,317**	**(6)**	**(3)**
Attributable to:				
Shareholders of Novartis AG	*12,463*	*13,100*	*(5)*	*(3)*
Non-controlling interests	*113*	*217*	*(48)*	*(48)*
Core basic EPS ($)	**5.15**	**5.50**	**(6)**	**(4)**

(1) In 2012, Other income and Other expense included in core operating income have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

nm = not meaningful

Income From Associated Companies

The income from associated companies increased from $528 million in 2011 to $552 million in 2012.

The following is a summary of the individual components included in the income from associated companies:

	2012	2011
	$ m	$ m
Novartis share of Roche's estimated current-year consolidated net income	691	661
Amortization of additional intangible assets recognized by Novartis on initial accounting for the equity interest	(153)	(162)
Net income effect from Roche	**538**	**499**
Net income from other associated companies	**14**	**29**
Income from associated companies	**552**	**528**

The Group's 33.3% interest in Roche's voting shares, which represents a 6.4% interest in Roche's total equity, generated income of $538 million in 2012, up from $499 million in 2011. The 2012 contribution reflects an estimated $741 million share of Roche's net income in 2012. This contribution, however, was reduced by an exceptional charge of $50 million taken in 2012 as part of Roche's restructuring charges and $153 million for the amortization of intangible assets arising from the allocation of the purchase price paid by Novartis for this investment to Roche's intangible assets. A survey of analyst estimates is used to estimate the Group's share of net income in Roche. Any differences between these estimates and actual results will be adjusted in the 2013 consolidated financial statements.

Adjusting for the exceptional items in both years, core income from associated companies decreased 3% from $779 million to $755 million.

Interest Expense and other Financial Income/Expense

The interest expense decreased to $724 million in 2012 from $751 million in 2011 as a result of lower average gross financial debt compared to the prior year. Other financial income and expense amounted to a net expense of $96 million compared to a net expense of $2 million in 2011, mainly as a result of currency losses.

Taxes

Tax expenses in 2012 were $1.5 billion, an increase of 4% (6% cc) from 2011. The tax rate (taxes as a percentage of income before taxes) remained stable at 14.1%. The core tax rate (taxes as percentage of core income before taxes) decreased to 14.9% in 2012 from 15.3% in 2011.

For further information on the main elements contributing to the difference, see "—Core Results" and "Item 18. Financial Statements—Note 6".

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our principal accounting policies are set out in Note 1 to the Group's consolidated financial statements, which are prepared in accordance with IFRS as issued by the IASB.

Given the uncertainties inherent in our business activities, we must make certain estimates and assumptions that require difficult, subjective and complex judgments. Because of uncertainties inherent in such judgments, actual outcomes and results may differ from our assumptions and estimates, which could materially affect the Group's consolidated financial statements. Application of the following accounting

policies requires certain assumptions and estimates that have the potential for the most significant impact on our consolidated financial statements.

Deductions from Revenues

As is typical in the pharmaceuticals industry, our gross sales are subject to various deductions which are composed primarily of rebates and discounts to retail customers, government agencies, wholesalers, health insurance companies and managed healthcare organizations. These deductions represent estimates of the related obligations, requiring the use of judgment when estimating the effect of these sales deductions on gross sales for a reporting period. These adjustments are deducted from gross sales to arrive at net sales.

The following summarizes the nature of some of these deductions and how the deduction is estimated. After recording these, net sales represent our best estimate of the cash that we expect to ultimately collect. The US market has the most complex arrangements related to revenue deductions.

United States specific healthcare plans and program rebates

The United States Medicaid Drug Rebate Program is administered by State governments using State and Federal funds to provide assistance to certain vulnerable and needy individuals and families. Calculating the rebates to be paid related to this Program involves interpreting relevant regulations, which are subject to challenge or change in interpretative guidance by government authorities. Provisions for estimating Medicaid rebates are calculated using a combination of historical experience, product and population growth, product price increases and the mix of contracts and specific terms in the individual State agreements. These provisions are adjusted based on established processes and experiences from filing data with individual States.

The United States Federal Medicare program, which funds healthcare benefits to individuals age 65 or older, provides prescription drug benefits under Part D of the program. This benefit is provided through private prescription drug plans. Provisions for estimating Medicare Part D rebates are calculated based on the terms of individual plan agreements, product sales and population growth, product price increases and the mix of contracts, and are adjusted periodically.

We offer rebates to key managed healthcare plans in an effort to increase sales of our products. These rebate programs provide payors a rebate after they have demonstrated they have met all terms and conditions set forth in their contractual agreement. These rebates are estimated based on the terms of individual agreements, historical experience and projected product growth rates. We adjust provisions related to these rebates periodically to reflect actual experience.

There is often a time lag of several months between us recording the revenue deductions and our final accounting for them.

Non-United States specific healthcare plans and program rebates

In certain countries other than the US, we provide rebates to governments and other entities. These rebates are often mandated by laws or government regulations.

In several countries we enter into innovative pay-for-performance arrangements with certain healthcare providers, especially in Europe and Australia. Under these agreements, we may be required to make refunds to the healthcare providers or to provide additional medicines free of charge if anticipated treatment outcomes do not meet predefined targets. Potential refunds and the delivery of additional medicines at no cost are estimated and recorded as a deduction of revenue at the time the related revenues are recorded. Estimates are based on historical experience and clinical data. In cases where historical experience and clinical data are not sufficient for a reliable estimation of the outcome, revenue recognition would be deferred until such history would be available.

There is often a time lag of several months between us recording the revenue deductions and our final accounting for them.

Non-healthcare plans and program rebates, returns and other deductions

Charge-backs occur where our subsidiaries have arrangements with indirect customers to sell products at prices that are lower than the price charged to wholesalers. A charge-back represents the difference between the invoice price to the wholesaler and the indirect customer's contract price. We account for vendor charge-backs by reducing revenue by an amount equal to our estimate of charge-backs attributable to a sale and they are generally settled within one to three months of incurring the liability. Provisions for estimated charge-backs are calculated using a combination of factors such as historical experience, product growth rates, payments, level of inventory in the distribution channel, the terms of individual agreements and our estimate of the claims processing time lag.

We offer rebates to purchasing organizations and other direct and indirect customers to sustain and increase market share for our products. Since rebates are contractually agreed upon, rebates are estimated based on the terms of 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 2013, sales returns amounted to approximately 1% of gross product sales. If sufficient experience is not available, sales are only recorded based on evidence of product consumption or when the right of return has expired.

We enter into distribution service agreements with major wholesalers, which provide a financial disincentive for the wholesalers to purchase product quantities exceeding current customer demand. Where possible, we adjust shipping patterns for our products to maintain wholesalers' inventories level consistent with underlying patient demand.

We offer cash discounts to customers to encourage prompt payment. Cash discounts are accrued at the time of invoicing and deducted from revenue.

Following a decrease in the price of a product, we generally grant customers a "shelf stock adjustment" for a customer's existing inventory for the involved product. Provisions for shelf stock adjustments, which are primarily relevant within the Sandoz Division, are determined at the time of the price decline or at the point of sale if a price decline can be reasonably estimated based on inventory levels of the relevant product.

Other sales discounts, such as consumer coupons and co-pay discount cards, are offered in some markets. These discounts are recorded at the time of sale, or when the coupon is issued, and are estimated utilizing historical experience and the specific terms for each program. If a discount for a probable future transaction is offered as part of a sales transaction then an appropriate portion of revenue is deferred to cover this estimated obligation.

We adjust provisions for revenue deductions periodically to reflect actual experience. To evaluate the adequacy of provision balances, we use internal and external estimates of the level of inventory in the distribution channel, actual claims data received and the time lag for processing rebate claims. Management also estimates the level of inventory of the relevant product held by retailers and in transit. External data sources include reports of wholesalers and third-party market data purchased by Novartis.

The following table shows the worldwide extent of our revenue deductions provisions and related payment experiences:

PROVISIONS FOR REVENUE DEDUCTIONS

	Revenue deductions provisions at January 1	Effect of currency translation and business combinations	Payments/ utilizations	Income statement charge		Change in provisions offset against gross trade receivables	Revenue deductions provisions at December 31
				Adjustments of prior years	Current year		
	$ m	$ m	$ m	$ m	$ m	$ m	$ m
2013							
US specific healthcare plans and program rebates	1,442		(3,000)	(74)	3,014		1,382
Non-US specific healthcare plans and program rebates	966	11	(1,674)	(45)	1,961	(63)	1,156
Non-healthcare plans and program related rebates, returns and other deductions	1,664	(10)	(8,088)	(80)	8,319	(161)	1,644
Total 2013	**4,072**	**1**	**(12,762)**	**(199)**	**13,294**	**(224)**	**4,182**
2012							
US specific healthcare plans and program rebates	1,440	17	(3,191)	(46)	3,222		1,442
Non-US specific healthcare plans and program rebates	766	15	(1,423)	94	1,514		966
Non-healthcare plans and program related rebates, returns and other deductions	1,536	176	(7,324)	(143)	7,509	(90)	1,664
Total 2012	**3,742**	**208**	**(11,938)**	**(95)**	**12,245**	**(90)**	**4,072**
2011							
US specific healthcare plans and program rebates	1,162		(2,860)	(19)	3,157		1,440
Non-US specific healthcare plans and program rebates	575	(24)	(1,043)	(23)	1,281		766
Non-healthcare plans and program related rebates, returns and other deductions	1,360	(68)	(6,846)	(7)	7,324	(227)	1,536
Total 2011	**3,097**	**(92)**	**(10,749)**	**(49)**	**11,762**	**(227)**	**3,742**

The table below shows the gross to net sales reconciliation for our Pharmaceuticals Division:

GROSS TO NET SALES RECONCILIATION

	Income statement charge			
	Charged through revenue deduction provisions	Charged directly without being recorded in revenue deduction provisions	Total	In % of gross sales
	$ m	$ m	$ m	
2013				
Pharmaceuticals gross sales subject to deductions			**40,188**	**100.0**
US specific healthcare plans and program rebates	(2,125)		(2,125)	(5.3)
Non-US specific healthcare plans and program rebates	(1,368)	(802)	(2,170)	(5.4)
Non-healthcare plans and program related rebates, returns and other deductions	(1,731)	(1,948)	(3,679)	(9.2)
Total Pharmaceuticals gross to net sales adjustments	**(5,224)**	**(2,750)**	**(7,974)**	**(19.8)**
Pharmaceuticals net sales 2013			**32,214**	**80.2**
2012				
Pharmaceuticals gross sales subject to deductions			**39,912**	**100.0**
US specific healthcare plans and program rebates	(2,358)		(2,358)	(5.9)
Non-US specific healthcare plans and program rebates	(1,096)	(842)	(1,938)	(4.8)
Non-healthcare plans and program related rebates, returns and other deductions	(1,579)	(1,884)	(3,463)	(8.7)
Total Pharmaceuticals gross to net sales adjustments	**(5,033)**	**(2,726)**	**(7,759)**	**(19.4)**
Pharmaceuticals net sales 2012			**32,153**	**80.6**
2011				
Pharmaceuticals gross sales subject to deductions			**40,004**	**100.0**
US specific healthcare plans and program rebates	(2,424)		(2,424)	(6.0)
Non-US specific healthcare plans and program rebates	(801)	(408)	(1,209)	(3.0)
Non-healthcare plans and program related rebates, returns and other deductions	(1,631)	(2,232)	(3,863)	(9.7)
Total Pharmaceuticals gross to net sales adjustments	**(4,856)**	**(2,640)**	**(7,496)**	**(18.7)**
Pharmaceuticals net sales 2011			**32,508**	**81.3**

Impairment of Goodwill, Intangible Assets and Property, Plant and Equipment

We review long-lived intangible assets and property, plant and equipment for impairment whenever events or changes in circumstance indicate that the asset's balance sheet carrying amount may not be recoverable. Goodwill, the Alcon brand-name and other currently not amortized intangible assets are reviewed for impairment at least annually.

An asset is generally considered impaired when its balance sheet carrying amount exceeds its estimated recoverable amount, which is defined as the higher of its fair value less costs of disposal and its value in use. Usually, Novartis adopts the fair value less costs of disposal method for its impairment evaluation. In most cases no directly observable market inputs are available to measure the fair value less

costs of disposal. Therefore an estimate of fair value less costs of disposal is derived indirectly and is based on net present value techniques utilizing post-tax cash flows and discount rates. In the limited cases where the value in use method is applied, net present value techniques are utilized using pre-tax cash flows and discount rates.

Fair value reflects estimates of assumptions that market participants would be expected to use when pricing the asset and for this purpose management considers the range of economic conditions that are expected to exist over the remaining useful life of the asset. The estimates used in calculating net present values are highly sensitive, and depend on assumptions specific to the nature of the Group's activities with regard to:

– amount and timing of projected future cash flows;

– future tax rates;

– behavior of competitors (launch of competing products, marketing initiatives, etc.); and

– appropriate discount rate.

Due to the above factors, actual cash flows and values could vary significantly from forecasted future cash flows and related values derived using discounting techniques.

The recoverable amount of a cash-generating unit and related goodwill is usually based on the fair value less costs of sale derived from applying discounted future cash flows based on the key assumptions in the following table:

	Pharmaceuticals	Alcon	Sandoz	Vaccines and Diagnostics	Consumer Health
	%	%	%	%	%
Sales growth rate assumptions after forecast period	1.5	3	0 to 2	0.5	0
Discount rate (post-tax)	6	6	6	6	6

In 2013, intangible asset impairment charges of $116 million were recognized. These relate to impairment charges of $57 million in the Alcon Division and $59 million in all other divisions.

In 2012, intangible asset impairment charges of $286 million were recognized. These relate to impairment charges of $211 million in the Pharmaceuticals Division. Novartis also recorded various impairment charges of $75 million in all other divisions.

Reversal of prior year impairment charges amounted to $2 million (2012: $3 million).

The amount of goodwill and other intangible assets on our consolidated balance sheet has increased significantly in recent years, primarily due to acquisitions. Although no significant additional impairments are currently anticipated, impairment evaluation could lead to material impairment charges in the future. For more information, see "Item 18. Financial Statements—Note 11".

Additionally, net impairment charges for property, plant and equipment during 2013 amounted to $80 million (2012: $39 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 and represent the difference between the receivable value in the balance sheet

and the estimated net collectible amount. Significant financial difficulties of a customer, such as probability of bankruptcy, financial reorganization, default or delinquency in payments are considered indicators that recovery of the trade receivable is doubtful. Trade receivable balances include sales to drug wholesalers, retailers, private health systems, government agencies, managed care providers, pharmacy benefit managers and government-supported healthcare systems. Novartis continues to monitor sovereign debt issues and economic conditions in Greece, Italy, Portugal, Spain and other countries, and evaluates trade receivables in these countries for potential collection risks. Substantially all of the trade receivables overdue from such countries are due directly from local governments or from government-funded entities. Deteriorating credit and economic conditions and other factors in these countries have resulted in, and may continue to result in an increase in the average length of time that it takes to collect these trade receivables and may require Novartis to re-evaluate the collectability of these trade receivables in future periods.

Retirement and other post-employment benefit plans

We sponsor pension and other post-employment benefit plans in various forms that cover a significant portion of our current and former associates. For post-employment plans with defined benefit obligations, we are required to make significant assumptions and estimates about future events in calculating the expense and the present value of the liability related to these plans. These include assumptions about the interest rates we apply to estimate future defined benefit obligations and net periodic pension expense as well as rates of future pension increases. In addition, our actuarial consultants provide our management with historical statistical information such as withdrawal and mortality rates in connection with these estimates.

Assumptions and estimates used by the Group may differ materially from the actual results we experience due to changing market and economic conditions, higher or lower withdrawal rates, and longer or shorter life spans of participants among other factors. For example, in 2013, a decrease in the interest rate we apply in determining the present value of the defined benefit obligations of one quarter of one percent would have increased our year-end defined benefit pension obligation for plans in Switzerland, US, UK, Germany and Japan, which represent 95% of the Group total defined benefit pension obligation, by approximately $0.8 billion. Similarly, if the 2013 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 92% of the Group's total net periodic pension cost for pension plans, would have increased by approximately $34 million. Depending on events, such differences could have a material effect on our total equity. For more information on obligations under retirement and other post-employment benefit plans and underlying actuarial assumptions, see "Item 18. Financial Statements—Note 25".

Contingencies

A number of our subsidiaries are involved in various government investigations and legal proceedings (intellectual property, sales and marketing practices, product liability, commercial, employment and wrongful discharge, environmental claims, etc.) arising out of the normal conduct of their businesses. For more information, see "Item 18. Financial Statements—Note 20".

We record accruals for contingencies when it is probable that a liability has been incurred and the amount can be reliably estimated. These accruals are adjusted periodically as assessments change or additional information becomes available. For product liability claims, a significant portion of the overall 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. We provide for individually significant cases when probable and the amount can be reliably estimated. Expected legal defense costs are accrued when the amount can be reliably estimated.

In some instances, the inherent uncertainty of litigation, the resources required to defend against governmental actions, the potential impact on our reputation, and the potential for exclusion from government reimbursement programs in the US and other countries have contributed to decisions by Novartis and other companies in our industry to enter into settlement agreements with governmental authorities. These settlements have had in the past, and may continue in the future, to involve large cash payments, including potential repayment of amounts that were allegedly improperly obtained and other penalties including treble damages. In addition, settlements of governmental healthcare fraud cases often require companies to enter into corporate integrity agreements, which are intended to regulate company behavior for a period of years. Our affiliate Novartis Pharmaceuticals Corporation is a party to such an agreement, which will expire in 2015. Also, matters underlying governmental investigations and settlements may be the subject of separate private litigation.

Provisions are recorded for environmental remediation costs when expenditure on remedial work is probable and the cost can be reliably estimated. Remediation costs are provided for under "Non-current liabilities" in the Group's consolidated balance sheet. They are estimated by calculating the present value of expected costs.

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 under deductions from revenue above. The amounts to be paid depend on various criteria such as the sales volume compared to certain targets, compared to the competition or to the Group's market share. There is considerable judgment required in estimating these contributions. The most important healthcare contributions relate to the United States Healthcare Reform fee which was introduced in 2011. This fee is an annual fee to be paid by pharmaceutical companies based on the prior year's government program sales. Effective 2013, the US government has also implemented a medical device sales tax which is levied on Alcon's US sales of products that are considered surgical devices under the respective act. The Pharmaceutical fee and the Medical Device Tax are recorded in "Other expenses" since they are considered to be an indirect tax or in inventory and cost of goods sold when the tax is levied on intercompany sales. The annual expense for these US taxes is approximately $200 million.

Taxes

We prepare and file our tax returns based on an interpretation of tax laws and regulations, and record estimates based on these judgments and interpretations. Our tax returns are subject to examination by the competent taxing authorities, which may result in an assessment being made requiring payments of additional tax, interest or penalties. Inherent uncertainties exist in our estimates of our tax positions. We believe that our estimated amounts for current and deferred tax assets or liabilities, including any amounts related to any uncertain tax positions, are appropriate based on currently known facts and circumstances.

New Accounting Pronouncements

See "Item 18, Financial Statements—Note 1".

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 expenses for 2013 and 2012 for currencies most important to the Group:

Currency		2013	2012	2011
		%	%	%
US dollar ($)	Net sales	36	36	36
	Operating expenses	40	39	38
Euro (EUR)	Net sales	26	25	27
	Operating expenses	25	25	25
Swiss franc (CHF)	Net sales	2	2	2
	Operating expenses	12	13	14
Japanese yen (JPY)	Net sales	8	9	9
	Operating expenses	4	5	4
Other currencies	Net sales	28	28	26
	Operating expenses	19	18	19

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.

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 2013, 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 also use forward contracts and foreign currency options to hedge expected net revenues in foreign currencies. For more information on how these transactions affect our consolidated financial statements and on how foreign exchange rate exposure is managed, see "Item 18. Financial Statements—Notes 1, 5, 16 and 29".

There is also a risk that certain countries could devalue their currency. If this occurs, then it could impact the effective prices we would be able to charge for our products and also have an adverse impact on both our consolidated income statement and balance sheet. The Group is exposed to a potential adverse devaluation risk on its intercompany funding and total investment in certain subsidiaries operating in countries with exchange controls. The most significant country in this respect is Venezuela, where the Group has approximately $220 million of cash in the country, which is only slowly being approved for remittance outside the country. As a result the Group is exposed to a potential income

statement financial result devaluation loss on its total intercompany balances with subsidiaries in Venezuela and related net investments, which at December 31, 2013 amounted to approximately $340 million and $35 million, respectively. The Group used the official exchange rate as published by CADIVI (Venezuelan Commission for the Administration of Foreign Currency) of VEF 4.3/$ until the devaluation on February 8, 2013 and VEF 6.3/$ since then for the consolidation of the financial statements of the Venezuelan subsidiaries.

The average value of the EUR and CHF in 2013 increased against the US dollar whereas the GBP, JPY and certain emerging market currencies were weaker. The following table sets forth the foreign exchange rates of the US dollar against key currencies used for foreign currency translation when preparing the Group's consolidated financial statements:

	Average for year		Change	Year-end		Change
$ per unit	**2013**	**2012**	**in %**	**2013**	**2012**	**in %**
EUR	1.328	1.286	3	1.378	1.319	4
CHF	1.079	1.067	1	1.124	1.093	3
GBP	1.564	1.585	(1)	1.653	1.616	2
JPY (100)	1.026	1.254	(18)	0.952	1.161	(18)

	Average for year		Change	Year-end		Change
$ per unit	**2012**	**2011**	**in %**	**2012**	**2011**	**in %**
EUR	1.286	1.392	(8)	1.319	1.294	2
CHF	1.067	1.130	(6)	1.093	1.064	3
GBP	1.585	1.603	(1)	1.616	1.543	5
JPY (100)	1.254	1.255	0	1.161	1.289	(10)

The following table provides a summary of the currency impact on key Group figures due to their conversion into US dollar, the Group's reporting currency, of the financial data from entities reporting in non-US dollars. Constant currency (cc) calculations apply the exchange rates of the prior year to the current year financial data for entities reporting in non-US dollars.

CURRENCY IMPACT ON KEY FIGURES

	Change in constant currencies % 2013	Change in $ % 2013	Percentage point currency impact 2013	Change in constant currencies % 2012[(1)]	Change in $ % 2012[(1)]	Percentage point currency impact 2012
Net sales	4	2	(2)	0	(3)	(3)
Operating income	5	(3)	(8)	7	4	(3)
Net income	7	(1)	(8)	7	3	(4)
Core operating income	3	(2)	(5)	(3)	(5)	(2)
Core net income	5	0	(5)	(4)	(6)	(2)

(1) Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see "Item 18. Financial Statements—Note 30".).

For additional information on the effects of currency fluctuations, see "Item 18. Financial statements—Note 29".

FACTORS AFFECTING RESULTS OF OPERATIONS

A number of key factors impact the Group's results of operations and the development of our businesses.

We believe that these factors, which include demographic and socioeconomic shifts, scientific and technological advances and changing patient behaviors, will continue to drive growth in the demand for and access to healthcare. At the same time, the current business and regulatory environment presents significant risks and potential impediments to our growth and to the broader global healthcare industry.

Transformational Changes Fueling Demand

Long-term trends in the composition and behavior of the global population, as well as advances in science and technology, are opening new frontiers in patient treatment and driving demand for healthcare around the world. These trends are expected to sustain steady growth in the healthcare market overall in the coming years and to drive accelerating growth in key segments.

Aging Population and Shifting Behaviors

Scientific advances in treating diseases and increased access to healthcare worldwide have contributed to a rise in life expectancy and fall in birth rates, increasing the proportion of elderly people around the world. According to the United Nations Population Fund, the number of people aged 60 or over has quadrupled in just 60 years and is projected to reach 2 billion by 2050.

With the aging of the global population, we have seen an increase in diseases and conditions that disproportionately affect the elderly, such as lung cancer and Alzheimer's disease. Novartis has many products in its portfolio to help patients with diseases and conditions such as these, including innovative offerings for the treatment of cancer, neurodegenerative diseases, ophthalmological diseases and cardiovascular conditions.

Another major trend in global health is an increase in obesity rates. In the last 20 years, obesity rates have doubled among adults and tripled among children. Together with inactive lifestyles and habits, this has boosted the prevalence of chronic diseases, including cardiovascular disease, diabetes and chronic respiratory diseases, which now account for over 60% of deaths worldwide, according to the World Health Organization (WHO). Novartis businesses, particularly Pharmaceuticals, Alcon and Sandoz, offer products that help patients suffering from chronic diseases. We plan to continue to invest in new treatments to address this growing health threat.

Global Rise in Healthcare Spending Led by Emerging Markets

Despite a difficult economic environment, global healthcare spending continues to rise around the world. In OECD countries, for example, average public healthcare expenditures are expected to comprise 8% of total GDP in 2060, a 2.5 percentage point increase from 2010.

While developed countries still dedicate a higher percentage of their GDP to healthcare than the rest of the world, emerging markets are contributing an increasing proportion of total global healthcare expenditures, due in part to a growing middle class. According to the Brookings Institute, the global middle class, defined as households with daily expenditures between $10 and $100 per person, is on track to more than double in size in 20 years, from roughly 2 billion in 2013 to 4.9 billion in 2030. Most of that growth is expected to come from emerging markets, led by China and India. At present growth rates, Asia will have more than 2 billion people in middle class households within the next decade.

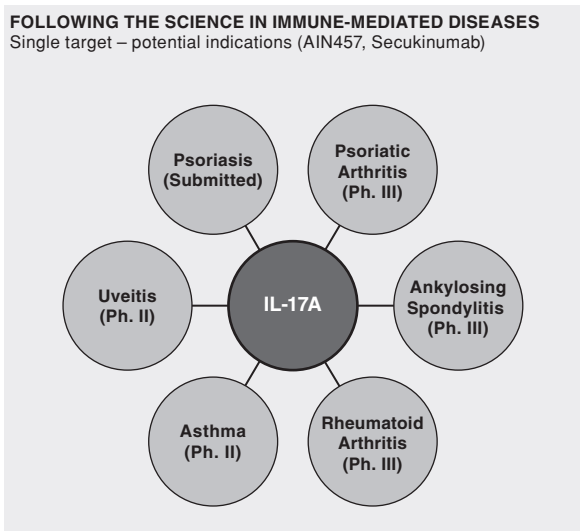
According to IMS Health, emerging markets are expected to make up 30% of global medicine expenditures by 2016, spending $35-40 billion on pharmaceuticals alone. At a time of slowing growth in industrialized countries, many emerging markets have experienced proportionately higher sales growth

and an increasing contribution to the industry's global performance. In 2013, we generated $14.7 billion, or approximately 25% (2012: 24%) of net sales from Emerging Growth Markets—which comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand—as compared with $43.2 billion, or approximately 75% (2012: 76%) of our net sales, in the Established Markets.

We expect this trend to continue in the long term, and with our diversified portfolio spanning patented pharmaceuticals, generics and OTC medicines, we are well-positioned to meet the needs of patients in emerging markets.

Scientific Advances Opening new Opportunities

As research in the fields of genomics and biotechnology becomes more sophisticated, we are developing a better understanding of the molecular and genetic basis of diseases. We have successfully utilized our understanding of basic molecular pathways to expand the applicability of medicines towards novel targets. For example, we unraveled the biology of cytokine IL-17A by studying the effect of AIN457 in clearing skin lesions in psoriasis patients. We are also studying the applicability of AIN457 in multiple other diseases based on its ability to inhibit IL-17A, including psoriatic arthritis, ankylosing spondylitis, rheumatoid arthritis, uveitis, multiple sclerosis and asthma. Further, we are gaining a greater capability to identify specific biological factors, called "biomarkers," that could indicate whether or not a given drug will be effective for a particular patient. For example, in the case of Fragile X syndrome, we developed a diagnostic test that determines the methylation level of the DNA in these patients, which appears to be a predictor of response to our drug, AFQ056. Over the period of 2012 to 2016, the global market for targeted therapies is expected to grow at a double-digit rate of approximately 12%.



The science of biomarkers is just one element of a larger industry trend toward personalized medicine, which has the potential to shape not only the way diseases are managed, but also how new drugs are developed. It could, for example, accelerate the drug development process if regulators were to accept smaller trials geared toward patients with specific disease subtypes or mutations, as opposed to traditional large-scale clinical trials for which it can be more difficult to demonstrate that a drug is effective in certain subsections of the patient population. This would further enhance our ability to streamline the innovation process and deliver customized medicines for improved patient outcomes.

New Technologies Changing the Delivery of Healthcare

New technologies, such as connected medical devices and health information technology systems, are streamlining the delivery of healthcare and improving patient outcomes. Connected medical devices, for example, offer the potential to record and share information about a patient's daily medicine intake, making it easier for doctors to monitor patient compliance and response to treatment. In our Pharmaceuticals Division, we are developing an "*eBreezhaler*" device for chronic obstructive pulmonary disease (COPD) patients so that their doctors could have the ability to track key health indicators remotely and in real time. We expect this device to reduce the occurrence of hospitalization and contribute to greater treatment adherence, improving outcomes at lower costs.

We are also using new technologies in the Alcon Division to improve outcomes for cataract patients. The latest example is our Cataract Refractive Suite, which comprises multiple innovations and advanced technologies from Alcon's extensive surgical device portfolio working seamlessly together to optimize consistency in how cataract surgery is approached and executed. One component of the Suite, the *Verion* image guided system, captures a reference image and helps to generate a surgical plan, which is then integrated in the operating room via a tracking overlay, allowing surgeons to see all incisions and alignment in real time. As the leader in the global refractive cataract surgery category, Alcon constantly strives to introduce the latest advancements in surgical innovations and technologies to optimize and improve the refractive cataract procedure and improve patient outcomes.

In the R&D setting, new technologies can also help improve the accuracy of clinical trials and accelerate the drug development process. For example, the need to travel to and from clinical trial sites poses an inconvenience for many patients and contributes to low retention rates. By using mobile apps to check and record relevant data from clinical trial participants in their homes, we expect to improve retention and streamline the reporting process, which in turn has the potential to contribute to increased accuracy. In clinical trials, Novartis also uses tablets to reduce the potential for human error in transcribing patient data on paper forms, and facilitate monitoring from a central database. With this approach, we both enhance accuracy and lower costs, which could help us to bring drugs to market more quickly and efficiently.

Patient Engagement

Greater access to health information and tools to communicate with providers is making patients more active participants in their own healthcare. According to the Pew Research Center's Internet & American Life Project, 59% of all adults in the US have searched online for information about a disease or treatment, and 11% have posted comments or queries online pertaining to health or medical matters.

With patients actively seeking health information online, we have an opportunity to deliver more holistic healthcare solutions. For example, we are developing the *myGIST Companion* app for patients with gastrointestinal stromal tumors (GIST). The app is designed to be interactive, and provide a checklist for patients to chart their symptoms and measure their progress, which we expect will allow them to play an active role in managing their disease.

In addition, we are engaging patients by providing them with tools and platforms to share their experiences and learn about their conditions and treatment options. For example, in multiple sclerosis (MS)—where we offer *Gilenya*, the first oral therapy approved to treat relapsing forms of the disease—we launched a set of interactive, patient-friendly web-based tools, including an animated video series and a Pinterest page. Through these online interactions, we gain a better understanding of patient concerns, which we can then address in our product development and marketing efforts.

Shift to Generics and OTC Products

Rising healthcare costs have precipitated greater consumer demand for affordable products, such as generic equivalents and alternatives to the originating pharmaceutical products. According to IMS Health, 84% of prescriptions dispensed in the US in 2012 were for generic medications, up from 63% five years earlier. By 2017, it is projected that generics will account for 87% of all prescriptions filled. Similarly, a study by Booz & Company found that OTC products are used by 79% of US consumers, or 240 million people, and save the US healthcare system more than $100 billion per year.

With leadership positions in both generics and over-the-counter medicines, we believe that we are well-positioned to take advantage of these trends and meet the needs of consumers worldwide.

Increasingly Challenging Business Environment

While these transformational changes present opportunities for growth, our businesses also face significant risks and uncertainties. Our business, as well as our financial condition or results of operations, could be materially adversely affected by a number of risks, including those set out here.

Patent Expirations and Product Competition

It is estimated that, in the five years between 2007 and 2012, generic erosion of patented pharmaceuticals accounted for an estimated loss of $67 billion in annual sales among the top drug companies. Current estimates suggest that this impact could be even greater in the future, potentially amounting to $250 billion in lost sales from 2012 to 2015.

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

Some of our best-selling products have begun to face considerable competition due to the expiration of patent protection. For example:

- The patent on valsartan, the active ingredient of *Diovan*/*Co-Diovan*/*Diovan HCT* (high blood pressure), which was long our best-selling product, expired in the major countries of the EU in November 2011, and generic competitors have launched there. In addition, patent protection expired in the US in September 2012, and generic versions of *Diovan HCT* have launched in the US. Generic versions of *Diovan* monotherapy have not yet launched in the US but could potentially launch at any time. In addition, patent protection for *Diovan* expired in Japan in 2013, and will expire there in 2016 for *Co-Diovan* (including patent term extensions).
- The patent on the active ingredient in *Gleevec*/*Glivec* (cancer) will expire in 2015 in the US, in 2016 in the major EU countries and in September 2014 for the main indications in Japan. However, the product is protected by additional patents claiming innovative features of *Gleevec*/*Glivec*. Generic versions of *Gleevec*/*Glivec* have already launched in Turkey, Brazil, Canada, China, India, Russia and for a minor indication in Japan.

In 2014, the impact of generic competition on our net sales is expected to be as much as $3.0 billion. Because we typically have reduced marketing and R&D expenses related to a product in its final year of exclusivity, it is anticipated that the loss of patent protection will have an impact on our operating income, which can be expected to correspond to a significant portion of the product's lost sales.

Aside from generic competition, all of our businesses face other competing healthcare products. Doctors, patients or those responsible for the reimbursement of the cost of healthcare products may

choose competitor products over ours if they perceive the products to be safer, more effective, easier to administer, less expensive or more cost effective. In 2013, for example, we saw launches of products significantly competitive to *Lucentis* and *Gilenya*, two growth products in our Pharmaceuticals Division. Such competitive products could affect the revenues from our products, and could affect our results of operations.

Though the wave of patent expiries presents a significant challenge to our Pharmaceuticals and Alcon Divisions, it is also an opportunity for our Sandoz Division, which develops, manufactures, distributes and sells prescription medicines that are not protected by valid and enforceable third-party patents. According to IMS Health, Sandoz is the number two company in worldwide generics sales and is the global leader in biosimilars. With our global footprint and advanced technical expertise, as well as our strong track record of being first to market with new generic medicines, we expect Sandoz to help offset the impact of generic competition on our branded portfolio.

Heightened Regulatory and Safety Hurdles

Following a series of widely publicized issues in recent years, health regulators are increasingly focusing on product safety. In addition, government authorities around the world have paid increased attention to the risk/benefit profile of pharmaceutical products with an emphasis on product safety and on incremental improvement over older products in the same therapeutic class. These developments have led to requests for more clinical trial data, for the inclusion of a significantly higher number of patients in clinical trials and for more detailed analyses of the trials. As a result, the already lengthy and expensive process of obtaining regulatory approvals for pharmaceutical products has become even more challenging.

The post-approval regulatory burden on healthcare companies has also been growing. Approved drugs have increasingly been subject to requirements such as Risk Evaluation and Mitigation Strategies (REMS), risk management plans, comparative effectiveness studies, health technology assessments and requirements to conduct post-approval Phase IV clinical trials to gather far more detailed safety and other data on products. These requirements make the maintenance of regulatory approvals and achievement of reimbursement for our products increasingly expensive and further heighten the risk of recalls, product withdrawals, or loss of market share. Like our industry peers, we have been required by health authorities to conduct additional clinical trials, and to submit additional analyses of our data in order to obtain product approvals or reimbursement by government or private payors. We have had REMS and other such requirements imposed as a condition for approval of our new drugs. By increasing the costs of and causing delays in obtaining approvals, and by creating an increased risk that products either will not be approved, or will be removed from the market after previously having been approved, these regulatory developments have had, and can be expected to continue to have, a material adverse effect on our business, financial condition and results of operations.

Despite this risk, however, we expect that our focus on improving patient outcomes and understanding disease pathways will allow Novartis to continue to bring innovative, effective and safe medicines to market.

Risk of Liability and Supply Disruption from Manufacturing Issues

The manufacture of our products is both highly regulated and complex, and may result in a variety of issues that could lead to extended supply disruptions and significant liability. Governmental health authorities around the world, including the US FDA, closely regulate the manufacture of our products, and continue to intensify their scrutiny of manufacturers' compliance with their requirements. If we or our third party suppliers fail to comply fully with these requirements and the health authorities' expectations, then we could be required to shut down our production facilities or production lines. In this event, we could experience product shortages, or be unable to supply products to patients for an extended period of time, and such shortages or supply failures have led to, and could continue to lead to, significant losses of

sales revenue and to potential third party litigation. Health authorities could also impose significant penalties on us.

We have faced, and in some cases continue to face, significant manufacturing issues. For example, in 2013, Sandoz continued to upgrade its systems and processes to ensure one quality standard across the organization following a warning letter from the US FDA in 2011 pertaining to three of the division's North American manufacturing facilities, and another received in 2013 with respect to the Sandoz site in Unterach, Austria. Sandoz has now achieved upgraded compliance status at two of those sites (Broomfield, Colorado, US in 2012 and Boucherville, Canada in 2013). We also continued to make progress on quality remediation at Consumer Health's manufacturing facility in Lincoln, Nebraska, US, where we suspended operations and shipments at the end of 2011. In 2013, the FDA re-inspected the Lincoln site and made zero Form 483 observations relating to its manufacturing operations. Consequently, we resumed shipments of newly validated *Sentinel* and *Excedrin*, two of the products produced at that site, to our customers in North America.

As a result of such manufacturing issues, we have been unable to supply certain products to the market for significant periods of time, and so have suffered and may continue to suffer significant losses in sales and market share. In addition, supply issues have required us to outsource the production of certain key products that were previously manufactured in our own production facilities, as well as expend considerable resources on the remediation of the issues at our sites, which may limit the potential profitability of such products. To meet increasing health authority expectations, we are devoting substantial time and resources to improve quality and assure consistency of product supply at our other manufacturing sites around the world.

In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials. For example, a significant portion of the Group's portfolio of products, including products from Pharmaceuticals, Alcon, Sandoz, and Vaccines and Diagnostics, are "biologic" products, which cannot be manufactured synthetically, but instead must be produced from living plant or animal microorganisms. As a result, the production of biologic-based products which meet all regulatory requirements is especially complex. Furthermore, because the production process is based on living plant or animal micro-organisms, the process could be affected by contaminants which could impact those micro-organisms. As a result, the inherent fragility of certain of our raw material supplies and production processes may cause the production of one or more of our products to be disrupted, potentially for extended periods of time.

In addition, the Group's portfolio includes a number of sterile products such as oncology treatments, which are considered to be technically complex to manufacture and require strict environmental controls. Because the production process for these products is complex and sensitive, there is a greater chance of production failures and lengthy supply interruptions.

Finally, because our products are intended to promote the health of patients, any manufacturing issues that result in supply disruptions or other production problems could potentially subject us, not only to government penalties, but also to lawsuits or allegations that the public health, or the health of individuals, has been endangered.

Weak Economic Environment and Increasing Pressure on Pricing

Though the global economy showed signs of recovery in 2013, overall growth was weak. In a cost-constrained environment, governments have continued to impose measures, such as rebates and price reductions, to make medicines more affordable.

These ongoing pricing pressures affect all of our businesses that rely on reimbursement, including Pharmaceuticals, Alcon, Sandoz, and Vaccines and Diagnostics. For example, in 2013, the UK's National Institute for Health and Clinical Excellence (NICE) recommended against the UK NHS funding the use of our products *Jakavi* (myelofibrosis) and *Afinitor* (advanced breast cancer indication). NICE did

recommend the funding of the use of our products *Xolair* (allergic asthma), *Lucentis* (diabetic macular edema indication) and *Jetrea* (vitreomacular traction), but only after we offered significant price discounts. In the US, under the Affordable Care Act (ACA), there is a newly created entity, the Independent Payment Advisory Board, which has been granted unprecedented authority to implement broad actions, such as required prescription drug discounts or rebates, to reduce future costs of the Medicare program. This could include required prescription drug discounts or rebates. In addition, as a result of the ongoing implementation of the ACA, some patients may be required to switch from existing commercial health insurance policies to policies offered on the new healthcare exchanges. Should a significant number of patients switch to policies offered on the exchanges that offer lesser benefits than their prior policies, there could be an impact on the sales or pricing of our products.

In addition to pricing pressures, concerns continue that some countries, including Greece, Italy, Portugal and Spain, may not be able to fully pay us for our products. Certain other countries, such as Venezuela, have taken steps to introduce exchange controls and limit companies from distributing retained earnings or paying intercompany payables due from those countries.

Current economic conditions may also adversely affect the ability of our distributors, customers, suppliers and service providers to obtain the liquidity required to pay for our products, or otherwise to buy necessary inventory or raw materials, and to perform their obligations under agreements with us, which could disrupt our operations, and could negatively impact our business and cash flow. In addition, the varying effects of difficult economic times on the economies, currencies and financial markets of different countries has impacted, and may continue to impact, the conversion of our operating results into our reporting currency, the US dollar, as well as the value of our investments in our pension plans. The financial situation may also result in a lower return on our financial investments, and a lower value on some of our assets. Alternately, inflation could accelerate, which could lead to higher interest rates and increase our costs of raising capital.

Consumer behavior has also been impacted by the weak economic environment, with patients around the world looking for ways to keep healthcare spending to a minimum. According to a study by the Commonwealth Fund, 80 million people in the US skipped recommended medical care or services because of high costs in 2012, up from 75 million people in 2011. Some of our businesses, including the elective surgical business of our Alcon Division and our OTC and Animal Health Divisions, may be particularly sensitive to declines in consumer spending. Our Pharmaceuticals, Vaccines and Diagnostics, and Sandoz Divisions, and the other remaining businesses of our Alcon Division, may also be sensitive to consumer cutbacks, particularly given the increasing requirements in certain countries that patients pay a larger contribution toward their own healthcare costs. As a result, there is a risk that consumers may cut back on prescription drugs and vaccines, as well as consumer health products, to help cope with rising costs and difficult economic times. To offset this trend and help ensure that patients get the care they need, Novartis offers coupon programs and incentives for patented products to facilitate access to the most effective treatments at an affordable price.

Potential Liability Arising from Legal Proceedings

In recent years, there has been a trend of increasing government investigations and litigations against companies operating in the industries of which we are a part, both in the US and in an increasing number of countries around the world. We are obligated to comply with the laws of all of the countries around the world in which we operate and sell products, both with respect to an extremely wide and growing range of activities, and with new requirements imposed on us from time to time as government and public expectations regarding acceptable corporate behavior change. To that end, we have a significant global compliance program in place, and devote substantial time and resources to efforts to ensure that our business is conducted in a legal and publicly acceptable manner. Nonetheless, despite our efforts, any failure to comply with the law or with heightened public expectations could lead to substantial liabilities that may not be covered by insurance and could affect our business and reputation.

A number of our subsidiaries are, and will likely continue to be, subject to various legal proceedings 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 remediation, taxation, privacy and intellectual property matters. Such proceedings are inherently unpredictable, and large judgments sometimes occur. As a consequence, we may in the future incur judgments or enter into settlements of claims that could have a material adverse effect on our results of operations or cash flows.

Governments and regulatory authorities around the world have been stepping up their compliance and law enforcement activities in recent years, and are increasingly challenging practices previously considered to be legal. Responding to such challenges and new regulations is costly, and requires an increasing amount of our management's time and attention. In addition, such investigations may affect our reputation, create a risk of potential exclusion from government reimbursement programs in the US and other countries, and may lead to litigation.

These factors have contributed to recent decisions by us and other companies in our industry, when deemed in their interest, to enter into settlement agreements with governmental authorities around the world prior to any formal decision by the authorities. These settlements have involved and may continue to involve large cash payments, including the potential repayment of amounts allegedly obtained improperly and penalties of up to treble damages. In addition, settlements of healthcare fraud cases often require companies to enter into corporate integrity agreements, which are intended to regulate company behavior for a period of years. Our affiliate Novartis Pharmaceuticals Corporation is a party to such an agreement, which will expire in 2015. Also, matters underlying governmental investigations and settlements may be the subject of separate private litigation. Adverse judgments or settlements in any significant investigations or cases against us could have a material adverse effect on our business, financial condition and results of operations.

FACTORS AFFECTING COMPARABILITY OF YEAR-ON-YEAR RESULTS OF OPERATIONS

Recent Significant Transactions

The comparability of the year-on-year results of our operations for the total Group can be significantly affected by acquisitions and divestments. The only transactions of significance during 2013, 2012 and 2011 are mentioned below.

Acquisitions in 2012

Sandoz—Acquisition of Fougera Pharmaceuticals, Inc.

On July 20, 2012, Sandoz completed the acquisition of 100% of Fougera Pharmaceuticals, Inc. a specialty dermatology generics company based in Melville, New York, for $1.5 billion in cash. Sandoz acquired Fougera for its strong dermatology development and manufacturing expertise. Fougera employed approximately 700 people.

The final purchase price allocation resulted in net identified assets of $0.6 billion (excluding acquired cash) and goodwill of $0.9 billion being recognized.

Acquisitions in 2011

Alcon full ownership and merger in 2011

On April 8, 2011 a Novartis Extraordinary General Meeting approved the merger of Alcon, Inc. with Novartis AG leading to the creation of the Alcon Division which became the fifth reported segment in Novartis' strategically diversified healthcare portfolio. The Extraordinary General Meeting also authorized the issuance of 108 million new shares. Alcon shareholders received 2.9228 Novartis shares

(which included a dividend adjustment) and $8.20 in cash for each share of Alcon, resulting in a total consideration of $168.00 per share.

During 2011, prior to the merger on April 8, 2011, 4.8% of the non-controlling interests in Alcon, Inc. were acquired for $2.4 billion. Completion of the acquisition of the outstanding 18.6% of Alcon Inc. on April 8, 2011 and subsequent merger, resulted in the issuance of Novartis shares with a fair value of $9.2 billion and a payment in cash of $0.5 billion to the Alcon, Inc. shareholders.

The final purchase price allocation was completed in 2011 and resulted in a fair value of net identifiable assets of $27.0 billion and goodwill of $18.0 billion. The excess of the value exchanged for the non-controlling interests in Alcon Inc, in 2011 over its recorded value together with merger related transaction costs resulted in a reduction in the Novartis consolidated equity of $5.7 billion.

For more detail on accounting for these transactions, see "Item 18, Financial Statements—Notes 1, 2 and 24".

Other Acquisitions in 2011

Pharmaceuticals—Acquisition of Genoptix, Inc.

On March 7, 2011 Novartis completed the acquisition of 100% of Genoptix, Inc., a specialized laboratory providing personalized diagnostic services to United States community-based hematologists and oncologists for $458 million in cash. Genoptix employed approximately 500 people.

The final purchase price allocation resulted in net identified assets of $237 million and goodwill of $221 million.

Divestment of Vaccines and Diagnostics' Blood Transfusion Diagnostics Unit in January 2014

On January 9, 2014 Novartis completed the divestment of its blood transfusion diagnostics unit to the Spanish company, Grifols S.A., for $1.7 billion in cash. This unit was part of Novartis Vaccines and Diagnostics and was dedicated to increasing transfusion safety worldwide. The estimated pre-tax gain on this transaction, subject to finalization of the accounting, will be approximately $0.9 billion.

NON-IFRS MEASURES AS DEFINED BY NOVARTIS

The following non-IFRS metrics are used by Novartis when measuring performance, especially when measuring current year results against prior periods: constant currencies, free cash flow, net debt and core results.

Despite the use of these measures by management in setting goals and measuring the Group's performance, these are non-IFRS measures that have no standardized meaning prescribed by IFRS. As a result, such measures have limits in their usefulness to investors.

Because of their non-standardized definitions, the non-IFRS measures (unlike IFRS measures) may not be comparable to the calculation of similar measures of other companies. These measures are presented solely to permit investors to more fully understand how the Group's management assesses underlying performance. These measures are not, and should not be viewed as, a substitute for IFRS measures.

As an internal measure of Group performance, these measures have limitations, and the performance management process is not solely restricted to these metrics.

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-$ functional currencies to $; 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 $ using the average exchange rates from the prior year and comparing them to the prior year values in $.

We use these constant currency measures in evaluating the Group's performance, since they may assist us in evaluating our ongoing performance from year to year. However, in performing our evaluation, we also consider equivalent measures of performance which are not affected by changes in the relative value of currencies.

Growth Rate Calculation

For ease of understanding, Novartis uses a sign convention for its growth rates such that a reduction in operating expenses or losses compared to the prior year is shown as a positive growth.

Free Cash Flow

Novartis defines free cash flow as cash flow from operating activities adjusted for 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 also not taken into account to determine free cash flow.

Free cash flow is presented as additional information because Novartis considers it to be a useful indicator of the Group's ability to operate without relying on additional borrowing or the use of existing cash. Free cash flow is a measure of the net cash generated that is available for debt repayment, investment in strategic opportunities and for returning to shareholders. Novartis uses free cash flow in internal comparisons of results from the Group's divisions. Free cash flow of the divisions uses the same definition as for the Group. No tax or financial receipts or payments are included in the division calculations. The definition of free cash flow used by Novartis does not include amounts related to changes in investments in associated companies nor related to acquisitions or divestments of subsidiaries. Free cash flow is not intended to be a substitute measure for cash flow from operating activities (as determined under IFRS).

Net Debt

Novartis defines net debt as our cash and cash equivalents, current investments and derivative financial instruments less interest-bearing loans and borrowings.

Core Results

The Group's core results—including core operating income, core net income and core earnings per share—exclude the amortization of intangible assets, impairment charges, expenses relating to the integration of acquisitions as well as certain other income and expense items that are, or are expected to accumulate within the year to be, over a $25 million threshold that management deems exceptional.

Novartis believes that investor understanding of the Group's performance is enhanced by disclosing core measures of performance because, since they exclude items which can vary significantly from year to year, the core measures enable better comparison across years. For this same reason, Novartis uses these core measures in addition to IFRS and other measures as important factors in assessing the Group's performance.

The following are examples of how these core measures are utilized:

– In addition to monthly reports containing financial information prepared under IFRS, senior management receives a monthly analysis incorporating these core measures.

– Annual budgets are prepared for both IFRS and core measures.

The following tables reconcile IFRS results to core results:

2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—GROUP

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**39,223**	**2,866**	**28**		**41**	**42,158**
Operating income	**10,910**	**2,955**	**259**	**331**	**30**	**14,485**
Income before taxes	**10,735**	**3,214**	**259**	**349**	**74**	**14,631**
Taxes	(1,443)					(2,098)[5]
Net income	**9,292**					**12,533**
Basic earnings per share ($)[6]	3.76					5.09
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(19,608)	2,866	28		41	(16,673)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(14,549)				27	(14,522)
Research & Development	(9,852)	85	86		39	(9,642)
General & Administration	(3,060)				25	(3,035)
Other income	1,367		(53)		(506)	808
Other expense	(2,219)	4	198	331	404	(1,282)
The following are adjustments to arrive at Core Income before taxes						
Income from associated companies	600	259		18		877
Other financial income and expense	(92)				44	(48)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms; Other expense includes amortization of intangible assets; Income from associated companies includes the Novartis share of the estimated Roche core items.

(2) Impairments: Cost of goods sold, Research & Development, Other income and Other expense include principally net impairment charges or reversals related to intangible assets and property, plant and equipment, mainly related to the Group-wide rationalization of manufacturing sites.

(3) Acquisition or divestment related items, restructuring and integration charges: Other expense includes Alcon integration costs. Income from associated companies includes restructuring charges related to Roche.

(4) Other exceptional items: Cost of goods sold, Other income and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Marketing & Sales includes charges related to termination of a co-promotional contract; Research & Development also includes a net increase of contingent consideration liabilities related to acquisitions; General & Administration includes exceptional IT-related costs; Other income includes divestment gains, a reversal of a Corporate provision, income from post-retirement medical plan amendments and reduction in restructuring charge provisions; Other expense includes a restructuring provision charge, provisions for legal matters, and charges for transforming IT and finance processes; Other financial income and expense includes devaluation losses of $44 million related to Venezuela.

(5) Taxes on the adjustments between IFRS and core results take into account, for each individual item included in the adjustment, the tax rate that will finally be applicable to the item based on the jurisdiction where the adjustment will finally have a tax impact. Generally, this results in amortization and impairment of intangible assets and acquisition-related restructuring and integration items having a full tax impact. There is usually a tax impact on exceptional items although this is not the case for items arising from criminal settlements in certain jurisdictions. Adjustments related to income from associated companies are recorded net of any related tax effect. Due to these factors and the differing effective tax rates in the various jurisdictions, the tax on the total adjustments of $3.9 billion to arrive at the core results before tax amounts to $655 million. This results in the average tax rate on the adjustments being 16.8%.

(6) Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

2012	Restated IFRS results[1]	Amortization of intangible assets[2]	Impairments[3]	Acquisition or divestment related items, restructuring and integration charges[4]	Other exceptional items[5]	Restated Core results[1]
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**38,805**	**2,786**	**174**	**39**	**43**	**41,847**
Operating income	**11,193**	**2,876**	**356**	**330**	**87**	**14,842**
Income before taxes	**10,925**	**3,045**	**356**	**364**	**87**	**14,777**
Taxes	(1,542)					(2,201)[6]
Net income	**9,383**					**12,576**
Basic earnings per share ($)[7]	3.83					5.15
The following are adjustments to arrive at Core Gross Profit						
Other revenues	888				(56)	832
Cost of goods sold	(18,756)	2,786	174	39	99	(15,658)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(14,353)			1		(14,352)
Research & Development	(9,332)	87	109		20	(9,116)
General & Administration	(2,937)				14	(2,923)
Other income	1,049		(1)		(373)	675
Other expense	(2,039)	3	74	290	383	(1,289)
The following are adjustments to arrive at Core Income before taxes						
Income from associated companies	552	169		34		755

(1) Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements—Note 30").

(2) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms; Other expense includes amortization of intangible assets; Income from associated companies includes the recurring amortization of the purchase price allocation related to intangible assets included in the Novartis equity-method accounting for Roche of $153 million and $16 million for the Novartis share of the estimated Roche core items.

(3) Impairments: Cost of goods sold, Research & Development, Other income, and Other expense include principally impairments of intangible assets and property, plant & equipment; Other expense also includes impairments of financial assets.

(4) Acquisition or divestment related items, restructuring and integration charges: Cost of goods sold includes acquisition related inventory step-up adjustments; Marketing & Sales and Other expense relate to Alcon and Fougera integration costs; Income from associated companies includes a $16 million revaluation gain on the initial interest in an acquired company and the Novartis share of $50 million restructuring charge related to Roche.

(5) Other exceptional items: Other revenues include an income of $56 million related to an intellectual property settlement and license agreement; Cost of goods sold, Research & Development, Other income, and Other expense include

restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold also includes an additional charge of $22 million for product recalls related to a US production plant; Research & Development also includes a net $18 million increase of contingent consideration liabilities related to business combinations; General & Administration includes exceptional IT-related costs; Other income includes a provision reduction of $137 million mainly related to *Tekturna*/*Rasilez* inventories, a product divestment gain of $93 million, a reversal of prior year restructuring charges of $76 million, and a gain on divestment from the sale of financial assets of $51 million; Other expense includes principally a restructuring charge of $149 million related to the US business, and charges for transforming IT and finance processes of $117 million.

(6) Taxes on the adjustments between IFRS and core results take into account, for each individual item included in the adjustment, the tax rate that will finally be applicable to the item based on the jurisdiction where the adjustment will finally have a tax impact. Generally, this results in amortization and impairment of intangible assets and acquisition-related restructuring and integration items having a full tax impact. There is usually a tax impact on exceptional items although this is not the case for items arising from criminal settlements in certain jurisdictions. Adjustments related to income from associated companies are recorded net of any related tax effect. Due to these factors and the differing effective tax rates in the various jurisdictions, the tax on the total adjustments of $3.9 billion to arrive at the core results before tax amounts to $659 million. This results in the average tax rate on the adjustments being 17.1%.

(7) Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

2011	Restated IFRS results[1]	Amortization of intangible assets[2]	Impairments[3]	Acquisition or divestment related items, restructuring and integration charges[4]	Other exceptional items[5]	Restated Core results[1]
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**40,392**	**2,918**	**278**	**5**	**246**	**43,839**
Operating income	**10,780**	**3,028**	**1,224**	**148**	**511**	**15,691**
Income before taxes	**10,555**	**3,238**	**1,224**	**148**	**552**	**15,717**
Taxes	(1,483)					(2,400)[6]
Net income	**9,072**					**13,317**
Basic earnings per share ($)[7]	3.75					5.50
The following are adjustments to arrive at Core Gross Profit						
Net sales	58,566				117	58,683
Cost of goods sold	(18,983)	2,918	278	5	129	(15,653)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(15,079)				2	(15,077)
Research & Development	(9,583)	93	341		(90)	(9,239)
General & Administration	(2,970)	13				(2,957)
Other income	1,192		(3)	(102)	(806)	281
Other expense	(3,172)	4	608	245	1,159	(1,156)
The following are adjustments to arrive at Core Income before taxes						
Income from associated companies	528	210			41	779

(1) Other income and Other expense have been restated by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements—Note 30").

(2) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms; General & Administration includes the recurring amortization of intangible assets; Other expense includes amortization of intangible assets; Income from associated companies includes the recurring amortization of the purchase price allocation related to intangible assets included in the Novartis equity-method accounting for Roche of $162 million and $48 million for the Novartis share of the estimated Roche core items.

(3) Impairments: Cost of goods sold includes impairment charges related to *Tekturna*/*Rasilez*, Consumer Health in the US, and other intangible assets; Research & Development includes impairment charges principally for PTK796, AGO178 (agomelatine), PRT128, SMC021 and In Process Research & Development; Other income includes an impairment reversal; Other expense includes impairments of $314 million related to *Tekturna*/*Rasilez*, $47 million related to SMC021, $17 million related to the Group-wide rationalization of manufacturing sites, and amounts for financial assets.

(4) Acquisition-related divestment gains, restructuring and integration charges: Cost of goods sold includes an acquisition related inventory step-up adjustment; Other income includes a gain from product sales required by regulators to approve the Alcon merger; Other expense relates primarily to Alcon integration costs.

(5) Other exceptional items: Net sales to third parties includes a returns provision related to *Tekturna*/*Rasilez* and a recall provision related to over-the-counter products; Cost of goods sold and Marketing & Sales include charges related to Consumer Health in the US; Cost of goods sold, Research & Development, Other income, and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold and Other expense include Swiss restructuring charges of $254 million; Research & Development includes a reduction to a contingent consideration liability related to a business combination of $106 million in Sandoz; Other income and expense include a net $183 million gain from the Jump litigation settlement and a $100 million settlement gain, a $85 million insurance settlement gain, product divestment gains of $378 million, charges of $284 million related to legal settlements, $161 million for IT and finance restructuring projects, an amount of $295 million related to *Tekturna*/*Rasilez*, an amount of $13 million related to SMC021, and other restructuring charges; Income from associated companies reflects a charge of $41 million for the Novartis share of Roche's restructuring.

(6) Taxes on the adjustments between IFRS and core results take into account, for each individual item included in the adjustment, the tax rate that is applicable to the item in the jurisdiction where the adjustment arises. Generally, this results in amortization and impairment of intangible assets and acquisition-related restructuring and integration items having a full tax impact. There is usually a tax impact on exceptional items although this is not the case for items arising from criminal settlements in certain jurisdictions. Adjustments related to income from associated companies are recorded net of any related tax effect. Due to these factors and the differing effective tax rates in the various jurisdictions, the tax on the total adjustments of $5.2 billion to arrive at the core results before tax amounts to $917 million. This results in the average tax rate on the adjustments being 17.8%.

(7) Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS— PHARMACEUTICALS

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**26,258**	**228**		**6**	**26,492**
Operating income	**9,376**	**278**	**74**	**(205)**	**9,523**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(6,655)	228		6	(6,421)
The following are adjustments to arrive at Core Operating Income					
Marketing & Sales	(8,514)			27	(8,487)
Research & Development	(7,242)	50	29	2	(7,161)
Other income	699		(46)	(390)	263
Other expense	(774)		91	150	(533)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Research & Development includes impairment charges for in process projects; Other income includes charges related to the reversal of impairment charges related to aliskiren production equipment for which an alternative use has been found; Other expense includes impairment charges related to property, plant and equipment.

(3) Other exceptional items: Cost of goods sold includes principally restructuring charges related to the Group-wide rationalization of manufacturing sites offset by a provision reduction related to aliskiren; Marketing & Sales includes charges related to termination of a co-promotional contract; Research & Development includes restructuring charges; Other income includes principally divestment gains and a reduction in restructuring charge provisions; Other expense includes restructuring charges and provisions for legal matters.

2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**26,323**	**270**	**120**	**54**	**26,767**
Operating income	**9,598**	**322**	**238**	**55**	**10,213**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(6,578)	270	120	54	(6,134)
The following are adjustments to arrive at Core Operating Income					
Research & Development	(6,918)	52	91	78	(6,697)
Other income	577		(1)	(303)	273
Other expense	(755)		28	226	(501)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairments related to marketed products; Research & Development includes principally impairment charges related to In Process Research & Development; Other income includes reversal of impairment of property, plant & equipment; Other expense includes impairments of property, plant & equipment and financial assets.

(3) Other exceptional items: Cost of goods sold, Research & Development, Other income, and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Research & Development includes principally an increase of a contingent consideration liability related to a business combination; Other income includes a provision reduction of $137 million mainly related to *Tekturna*/*Rasilez* inventories, a product divestment gain of $93 million, and reversal of prior year restructuring charges of $70 million; Other expense includes a restructuring charge of $149 million related to the US business, an additional legal settlement provision of $19 million and an additional provision of $19 million related to *Tekturna*/*Rasilez* clinical studies, and a restructuring charge of $42 million related to the European and Asian business.

2011	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**26,632**	**369**	**249**		**115**	**27,365**
Operating income	**8,296**	**423**	**985**	**(81)**	**417**	**10,040**
The following are adjustments to arrive at Core Gross Profit						
Net sales to third parties	32,508				44	32,552
Cost of goods sold	(6,573)	369	249		71	(5,884)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(7,232)	54	303		15	(6,860)
Other income	697		(3)	(81)	(436)	177
Other expense	(1,825)		436		723	(666)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairments primarily related to *Tekturna*/*Rasilez*; Research & Development includes impairment charges principally for PTK796, AGO178 (agomelatine), PRT128 and SMC021; Other income includes an impairment reversal; Other expense includes impairments of $314 million related to *Tekturna*/*Rasilez* and $47 million related to SMC021, for financial assets, and related to the Group-wide rationalization of manufacturing sites.

(3) Acquisition-related divestment gains, restructuring and integration charges: Other income includes a gain from a product sale required by regulators to approve the Alcon merger.

(4) Other exceptional items: Net sales to third parties includes a returns provision related to *Tekturna*/*Rasilez*; Cost of goods sold, Research & Development and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold and Other expense include Swiss restructuring charges totalling $249 million; Other income includes a net product divestment gains of $334 million and a settlment income of $100 million and items related to the Group-wide rationalization of manufacturing sites; Other expense also includes an amount for a legal settlement of $80 million, an amount of $295 million related to *Tekturna*/*Rasilez*, an amount of $13 million related to SMC021, and other restructuring charges.

2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—ALCON

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**5,673**	**1,980**			**12**	**7,665**
Operating income	**1,232**	**1,989**	**61**	**330**	**82**	**3,694**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(4,900)	1,980			12	(2,908)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(1,042)	9	57		37	(939)
General & Administration	(589)				25	(564)
Other income	79				(40)	39
Other expense	(437)		4	330	48	(55)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Research & Development includes impairment charges related to in process projects; Other expense includes impairment charges related to property, plant and equipment.

(3) Acquisition or divestment related items, restructuring and integration charges: Other expense reflects acquisition-related Alcon integration and restructuring charges.

(4) Other exceptional items: Cost of goods sold includes net restructuring charges related to the Group-wide rationalization of manufacturing sites offset by the release of a contingent consideration liability related to recent acquisitions; Research & Development includes a net increase of contingent consideration liabilities related to acquisitions; General & Administration includes exceptional IT costs; Other income includes the impact of an income from a post-retirement medical plan amendment; Other expense includes net restructuring charges related to European commercial operations and the Group-wide rationalization of manufacturing sites.

2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**5,716**	**1,906**	**1**		**16**	**7,639**
Operating income	**1,465**	**1,915**	**17**	**264**	**37**	**3,698**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(4,618)	1,906	1		16	(2,695)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(975)	9	16			(950)
General & Administration	(510)				14	(496)
Other income	49				(1)	48
Other expense	(353)			264	8	(81)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairments of intangible assets; Research & Development includes impairment charges related to In Process Research & Development.

(3) Acquisition or divestment related items, restructuring and integration charges: Other expense relates to Alcon integration costs.

(4) Other exceptional items: Cost of goods sold, Other income, and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; General & Administration includes exceptional IT costs.

2011	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**5,457**	**1,912**			**20**	**7,389**
Operating income	**1,472**	**1,928**	**29**	**212**	**(149)**	**3,492**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(4,566)	1,912			20	(2,634)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(892)	3	20			(869)
General & Administration	(509)	13				(496)
Other income	262			(21)	(229)	12
Other expense	(309)		9	233	60	(7)

(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; General & Administration includes the recurring amortization of intangible assets.

(2) Impairments: Research & Development includes an In Process Research & Development impairment charge; Other expense includes impairment charges primarily related to the Group-wide rationalization of manufacturing sites.

(3) Acquisition-related divestment gains, restructuring and integration charges: Other income includes a gain from a product sale required by regulators to approve the Alcon merger; Other expense includes a loss from an Alcon merger-related divestment and Alcon integration costs.

(4) Other exceptional items: Cost of goods sold and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold includes a reduction to a contingent consideration provision related to a business combination; Other income and expense includes a net $183 million gain from the Jump litigation settlement.

2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—SANDOZ

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**3,995**	**407**	**20**	**2**	**4,424**
Operating income	**1,028**	**409**	**17**	**87**	**1,541**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(5,476)	407	20	2	(5,047)
The following are adjustments to arrive at Core Operating Income					
Research & Development	(787)	2			(785)
Other income	106		(6)		100
Other expense	(240)		3	85	(152)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairment charges related to intangible assets; Other income includes a reversal of impairment charges related to property, plant and equipment; Other expense includes impairment charges related to property, plant and equipment.

(3) Other exceptional items: Cost of goods sold includes net restructuring charges related to the Group-wide rationalization of manufacturing sites; Other expense includes provisions for legal matters.

2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**3,867**	**356**	**46**	**36**	**4**	**4,309**
Operating income	**1,091**	**364**	**46**	**62**	**(60)**	**1,503**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(5,126)	356	46	36	4	(4,684)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(1,561)			1		(1,560)
Research & Development	(695)	8	(3)		(59)	(749)
Other income	74				(10)	64
Other expense	(244)		3	25	5	(211)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairments of intangible assets; Research & Development includes principally a reversal of impairment charges related to In Process Research & Development; Other expense includes impairments of property, plant & equipment.

(3) Acquisition or divestment related items, restructuring and integration charges: Cost of goods sold includes Fougera related inventory step-up adjustment; Marketing & Sales and Other expense relate to Fougera integration costs.

(4) Other exceptional items: Cost of goods sold and Other income include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Research & Development includes principally a decrease of a contingent consideration liability related to a business combination; Other income also includes a restructuring provision release; Other expense includes exceptional remediation charges.

2011	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**4,356**	**368**	**18**	**4**	**4,746**
Operating income	**1,422**	**383**	**26**	**90**	**1,921**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(5,445)	368	18	4	(5,055)
The following are adjustments to arrive at Core Operating Income					
Research & Development	(640)	15	7	(106)	(724)
Other income	88			(12)	76
Other expense	(422)		1	204	(217)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold and Research & Development include an impairment charge of intangible assets; Other expense includes an impairment charge.

(3) Other exceptional items: Cost of goods sold and Other income include restructuring charges, respectively release, related to the Group-wide rationalization of manufacturing sites; Research & Development includes a reduction to a contingent consideration liability related to a business combination; Other income includes the release of a restructuring provision in Germany; Other expense includes a charge related to US litigations.

2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—VACCINES AND DIAGNOSTICS

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Core results
	$ m	$ m	$ m	$ m
Gross profit	**803**	**198**		**1,001**
Operating loss	**(165)**	**222**	**8**	**65**
The following are adjustments to arrive at Core Gross Profit				
Cost of goods sold	(1,578)	198		(1,380)
The following are adjustments to arrive at Core Operating loss				
Research & Development	(476)	24		(452)
Other expense	(88)		8	(80)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Other expense includes impairment charges for financial assets and property, plant and equipment.

2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**755**	**197**		**3**	**(56)**	**899**
Operating income	**(250)**	**215**	**12**	**3**	**(55)**	**(75)**
The following are adjustments to arrive at Core Gross Profit						
Other revenues	331				(56)	275
Cost of goods sold	(1,478)	197		3		(1,278)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(453)	18	5		1	(429)
Other expense	(115)		7			(108)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Research & Development includes impairments of intangible assets; Other expense includes a facility impairment charge and impairments of financial assets.

(3) Acquisition or divestment related items, restructuring and integration charges: Cost of goods sold includes an acquisition related inventory step-up adjustment.

(4) Other exceptional items: Other revenues include an income related to an intellectual property settlement and license agreement; Research & Development includes restructuring charges related to the Group-wide rationalization of manufacturing sites.

2011	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**954**	**211**		**5**	**2**	**1,172**
Operating income	**(249)**	**231**	**145**	**5**	**3**	**135**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(1,410)	211		5	2	(1,192)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(523)	20	8		1	(494)
Other expense	(185)		137			(48)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Research & Development includes an In Process Research & Development impairment charge; Other expense includes an impairment charge of a financial asset.

(3) Acquisition-related divestment gains, restructuring and integration charges: Cost of goods sold includes an acquisition related inventory step-up adjustment.

(4) Other exceptional items: Cost of goods sold and Research & Development adjustments represent restructuring charges related to the Group-wide rationalization of manufacturing sites.

2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS—CONSUMER HEALTH

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,360**	**53**	**8**	**21**	**2,442**
Operating income	**178**	**53**	**40**	**27**	**298**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(1,751)	53	8	21	(1,669)
The following are adjustments to arrive at Core Operating Income					
Other income	79		(1)	(1)	77
Other expense	(63)		33	7	(23)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets.

(2) Impairments: Cost of goods sold includes impairment charges related to intangible assets; Other income includes a reduction of an impairment charge; Other expense includes impairments of property, plant and equipment related to the Group-wide rationalization of manufacturing sites.

(3) Other exceptional items: Cost of goods sold and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Other income includes reversal of charges related to the Group-wide rationalization of manufacturing sites.

2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,050**	**57**	**7**	**25**	**2,139**
Operating income	**48**	**57**	**10**	**44**	**159**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(1,729)	57	7	25	(1,640)
The following are adjustments to arrive at Core Operating Income					
Other income	75			(8)	67
Other expense	(73)		3	27	(43)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets.

(2) Impairments: Cost of goods sold includes impairments of intangible assets; Other expense includes impairments of property, plant & equipment.

(3) Other exceptional items: Cost of goods sold, Other income, and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold also includes an additional charge for product recalls related to a US production plant and an impairment of a long-term asset; Other income includes a restructuring provision release; Other expense includes a legal settlement related to a US production plant.

2011	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,935**	**58**	**11**	**105**	**3,109**
Operating income	**727**	**59**	**16**	**71**	**873**
The following are adjustments to arrive at Core Gross Profit					
Net sales to third parties	4,631			73	4,704
Cost of goods sold	(1,735)	58	11	32	(1,634)
The following are adjustments to arrive at Core Operating Income					
Marketing & Sales	(1,674)			2	(1,672)
Research & Development	(296)	1	3		(292)
Other income	91			(44)	47
Other expense	(38)	—	2	8	(28)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes an impairment charge related to Consumer Health in the US; Research & Development and Other expense include impairment charges.

(3) Other exceptional items: Net sales to third parties includes an over-the-counter products recall provision; Cost of goods sold and Marketing & Sales include charges related to Consumer Health in the US; Other income includes a product divestment gain; Other expense includes charges related to the Group-wide rationalization of manufacturing sites and other restructuring charges.

2013 and 2012 Reconciliation of segment operating income to Core operating income

	Pharmaceuticals		Alcon		Sandoz		Vaccines and Diagnostics		Consumer Health		Corporate		Total	
	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	Restated 2012[1]	2013	Restated 2012[1]
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Operating income	**9,376**	**9,598**	**1,232**	**1,465**	**1,028**	**1,091**	**(165)**	**(250)**	**178**	**48**	**(739)**	**(759)**	**10,910**	**11,193**
Amortization of intangible assets	**278**	**322**	**1,989**	**1,915**	**409**	**364**	**222**	**215**	**53**	**57**	**4**	**3**	**2,955**	**2,876**
Impairments														
Intangible assets	29	211	57	17	20	43		5	8	7			114	283
Property, plant & equipment related to the Group-wide rationalization of manufacturing sites	1								33				34	
Other property, plant & equipment	28	25	4		(3)	3	1	6	(1)	3	17	2	46	39
Financial assets	16	2					7	1			42	31	65	34
Total impairment charges	**74**	**238**	**61**	**17**	**17**	**46**	**8**	**12**	**40**	**10**	**59**	**33**	**259**	**356**
Acquisition-related items														
—Expenses			330	264		62		3			1	1	331	330
Total acquisition-related items, net			**330**	**264**		**62**		**3**			**1**	**1**	**331**	**330**
Other exceptional items														
Exceptional divestment gains	(313)	(93)										(51)	(313)	(144)
Restructuring items														
—Income	(40)	(70)		(1)		(10)				(8)			(40)	(89)
—Expense	122	240	77	24	2	4		1	25	3			226	272
Legal-related items														
—Expense	33	19			85					25			118	44
Additional exceptional income	(70)	(137)	(56)		(4)	(59)		(56)			(75)		(205)	(252)
Additional exceptional expense	63	96	61	14	4	5			2	24	114	117	244	256
Total other exceptional items	**(205)**	**55**	**82**	**37**	**87**	**(60)**		**(55)**	**27**	**44**	**39**	**66**	**30**	**87**
Total adjustments	**147**	**615**	**2,462**	**2,233**	**513**	**412**	**230**	**175**	**120**	**111**	**103**	**103**	**3,575**	**3,649**
Core operating income	**9,523**	**10,213**	**3,694**	**3,698**	**1,541**	**1,503**	**65**	**(75)**	**298**	**159**	**(636)**	**(656)**	**14,485**	**14,842**
Core return on net sales	**29.6%**	**31.8%**	**35.2%**	**36.2%**	**16.8%**	**17.3%**	**3.3%**	**(4.0)%**	**7.3%**	**4.3%**			**25.0%**	**26.2%**

[1] Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements—Note 30").

2012 and 2011 Reconciliation of segment operating income to Core operating income

	Pharmaceuticals		Alcon		Sandoz		Vaccines and Diagnostics		Consumer Health		Corporate		Total	
	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	Restated 2012[1]	Restated 2011[1]	Restated 2012[1]	Restated 2011[1]
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Operating income	**9,598**	**8,296**	**1,465**	**1,472**	**1,091**	**1,422**	**(250)**	**(249)**	**48**	**727**	**(759)**	**(888)**	**11,193**	**10,780**
Amortization of intangible assets	**322**	**423**	**1,915**	**1,928**	**364**	**383**	**215**	**231**	**57**	**59**	**3**	**4**	**2,876**	**3,028**
Impairments														
Intangible assets	211	552	17	20	43	25	5	8	7	14			283	619
Property, plant & equipment related to the Group-wide rationalization of manufacturing sites		12		5										17
Other property, plant & equipment	25	391			3	1	6	2	3	2	2		39	396
Financial assets	2	30		4			1	135			31	23	34	192
Total impairment charges	**238**	**985**	**17**	**29**	**46**	**26**	**12**	**145**	**10**	**16**	**33**	**23**	**356**	**1,224**
Acquisition-related items														
—Gains		(81)		(21)										(102)
—Expenses			264	233	62		3	5			1	12	330	250
Total acquisition-related items, net		**(81)**	**264**	**212**	**62**		**3**	**5**			**1**	**12**	**330**	**148**
Other exceptional items														
Exceptional divestment gains	(93)	(334)								(44)	(51)		(144)	(378)
Restructuring items														
—Income	(70)		(1)		(10)	(12)			(8)				(89)	(12)
—Expense	240	420	24	52	4	4	1	3	3	8			272	487
Legal-related items														
—Income		(100)		(229)										(329)
—Expense	19	80		45		204			25				44	329
Additional exceptional income	(137)			(17)	(59)	(106)	(56)					(85)	(252)	(208)
Additional exceptional expense	96	351	14		5				24	107	117	164	256	622
Total other exceptional items	**55**	**417**	**37**	**(149)**	**(60)**	**90**	**(55)**	**3**	**44**	**71**	**66**	**79**	**87**	**511**
Total adjustments	**615**	**1,744**	**2,233**	**2,020**	**412**	**499**	**175**	**384**	**111**	**146**	**103**	**118**	**3,649**	**4,911**
Core operating income	**10,213**	**10,040**	**3,698**	**3,492**	**1,503**	**1,921**	**(75)**	**135**	**159**	**873**	**(656)**	**(770)**	**14,842**	**15,691**
Core return on net sales	**31.8%**	**30.9%**	**36.2%**	**35.1%**	**17.3%**	**20.3%**	**(4.0)%**	**6.8%**	**4.3%**	**18.9%**			**26.2%**	**26.8%**

(1) In 2012 Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements—Note 30").

NOVARTIS ECONOMIC VALUE ADDED

Novartis utilizes its own definition for measuring Novartis Economic Value Added (NVA), which is utilized for determining payouts under the Long-Term Performance Plan (LTPP). NVA is a non-IFRS metric and may not be comparable to the calculation of similar measures of other companies. This measure is presented solely to permit investors to more fully understand how the Group's management is compensated. The following table shows NVA for 2013 and 2012 utilizing the Novartis definition.

	Year ended December 31, 2013	Year ended December 31, 2012[1]	Change in $
	$ m	$ m	%
Operating income	**10,910**	**11,511**	**(5)**
Income from associated companies	600	552	9
Operating interest	(335)	(348)	4
Operating tax	(2,151)	(2,334)	8
Capital charge	(6,330)	(7,060)	10
Novartis Economic Value Added	**2,694**	**2,321**	**16**

(1) Since in 2012 these values were used for the payouts under the LTPP there has been no restatement to reflect the adoption of revised IAS 19 on *Employee Benefits*, see "Item 18. Financial Statements—Note 30".

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 profit before tax of each entity unadjusted for tax-disallowed items or tax loss carryforwards.

The capital charge is the notional interest charge on the Group's average non-current assets based on an internally calculated weighted average cost of capital for the Group.

5.B Liquidity and Capital Resources

Cash Flow

The following table sets forth certain information about the Group's cash flow and net debt.

	2013	2012	2011
	$ m	$ m	$ m
Cash flows from operating activities	13,174	14,194	14,309
Cash flows used in investing activities	(3,352)	(5,675)	(792)
Cash flows used in financing activities	(8,769)	(6,675)	(15,024)
Currency translation effect on cash and cash equivalents	82	(1)	(103)
Net change in cash and cash equivalents	**1,135**	**1,843**	**(1,610)**
Change in marketable securities, commodities, time deposits and derivative financial instruments	(32)	1,201	(1,449)
Change in current and non-current financial debts and derivative financial instruments	1,708	503	2,758
Change in net debt	**2,811**	**3,547**	**(301)**
Net debt at January 1	(11,607)	(15,154)	(14,853)
Net debt at December 31	**(8,796)**	**(11,607)**	**(15,154)**

Financial year 2013

In 2013, cash flow from operating activities amounted to $13.2 billion compared to $14.2 billion in the prior year, mainly due to lower operating income and higher working capital requirements.

In 2013, cash flow used in investing activities was $3.4 billion compared to $5.7 billion in the prior year. It includes investments in property, plant and equipment, which amounted to $3.1 billion compared to $2.7 billion in the prior year. These expenditures represent 5.3% and 4.8% of net sales in 2013 and 2012, respectively. The prior year cash flow used in investing activities included higher net investments in marketable securities of $1.1 billion and $1.7 billion for the acquisition of businesses mainly for the acquisition of Fougera Pharmaceuticals, Inc.

In 2013, cash flow used in financing activities amounted to $8.8 billion compared to $6.7 billion in 2012. The 2013 amount included a dividend payment of $6.1 billion, compared to $6.0 billion in 2012. There was a further $2.7 billion cash outflow in 2013, mainly related to net repayments of financial debts of $1.3 billion as well as a net outflow of $1.2 billion for treasury share purchases. This net outflow results from $2.9 billion spent on the acquisition of treasury shares and $1.7 billion of proceeds mainly from exercised options. In 2012, besides the dividend payment the cash flow used in financing activities mainly includes a net repayment of financial debts of $0.5 billion and a net cash outflow of $0.1 billion for treasury share transactions.

Financial year 2012

In 2012, cash flow from operating activities amounted to $14.2 billion, only marginally lower than the strong prior year amount of $14.3 billion as the impact of lower tax payments was offset by the payments from provisions created in earlier periods.

The cash flow used in investing activities amounted to $5.7 billion, $4.9 billion higher than 2011, which primarily reflected the amount spent for the acquisition of Fougera Pharmaceuticals, Inc. ($1.5 billion) and net investments in property, plant and equipment and other non-current assets, which amounted to $2.8 billion, while the net investment in marketable securities amounted to $1.1 billion. In 2011, the impact of the net investments in property, plant and equipment and in other non-current assets ($1.8 billion), as well as the cash used for acquisitions ($0.6 billion), were partially offset by the net proceeds from the sale of marketable securities ($1.6 billion).

In 2012, the cash used in financing activities amounted to $6.7 billion mainly on account of the dividend payment ($6.0 billion) and $0.5 billion net repayment of financial debt and represented a decrease of $8.3 billion compared to the prior year period. In 2011, the cash flow used in financing activities amounted to $15.0 billion mainly on account of the dividend payment ($5.4 billion), treasury share transactions ($3.5 billion), the acquisition of the non-controlling interest in Alcon ($3.2 billion) and $2.8 billion for the net repayment of financial debt.

Financial year 2011

In 2011, the cash flow from operating activities was $14.3 billion, a 2% increase from $14.1 billion in 2010 which included $1.8 billion of cash collections for A (H1N1) pandemic flu vaccines.

The strong increase in operating income after adjustments for non-cash items was partially mitigated by working capital requirements to fund business expansion.

Cash outflows for investing activities were $0.8 billion compared to $15.8 billion in the prior year period. Outflows for investments in property, plant and equipment ($2.2 billion) and intangible and financial assets ($0.4 billion) as well as acquisition of businesses ($0.6 billion), mainly Genoptix Inc., were partly compensated by net inflows from the sale of marketable securities ($1.6 billion) and proceeds from the sales of various assets ($0.8 billion, mainly Elidel® marketing rights).

In the prior year period, outflows for investments in property, plant and equipment ($1.7 billion) and in intangible and financial assets ($0.7 billion) as well as acquisition of businesses ($26.7 billion), mainly Alcon, were partially funded by the sale of marketable securities (net, $12.6 billion) and proceeds from the sales of various assets ($0.7 billion).

Net cash used for financing activities was $15.0 billion in 2011. It was comprised of outflows of $5.4 billion for the dividend payment, of a net $3.5 billion for treasury share repurchases, $3.2 billion for the acquisition of the Alcon non-controlling interests and net $2.8 billion for the repayment of financial debt and $0.1 billion other financing items. In 2010 the financing activities resulted in a net cash inflow of $4.1 billion on account of additional debt raised for the increased Alcon investment.

Condensed Consolidated Balance Sheets

	Dec 31, 2013	Restated Dec 31, 2012[1]	Change
	$ m	$ m	$ m
Assets			
Property, plant & equipment	18,197	16,939	1,258
Goodwill	31,026	31,090	(64)
Intangible assets other than goodwill	27,841	30,331	(2,490)
Financial and other non-current assets	18,648	17,827	821
Total non-current assets	**95,712**	**96,187**	**(475)**
Inventories	7,267	6,744	523
Trade receivables	9,902	10,051	(149)
Other current assets	3,392	3,090	302
Cash, marketable securities, commodities, time deposits and derivative financial instruments	9,222	8,119	1,103
Assets of disposal group held for sale	759		759
Total current assets	**30,542**	**28,004**	**2,538**
Total assets	**126,254**	**124,191**	**2,063**
Equity and liabilities			
Total equity	**74,472**	**69,263**	**5,209**
Financial debts	11,242	13,781	(2,539)
Other non-current liabilities	14,172	17,096	(2,924)
Total non-current liabilities	**25,414**	**30,877**	**(5,463)**
Trade payables	6,148	5,593	555
Financial debts and derivatives	6,776	5,945	831
Other current liabilities	13,394	12,513	881
Liabilities of disposal group held for sale	50		50
Total current liabilities	**26,368**	**24,051**	**2,317**
Total liabilities	**51,782**	**54,928**	**(3,146)**
Total equity and liabilities	**126,254**	**124,191**	**2,063**

(1) Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

Total non-current assets amounted to $95.7 billion at December 31, 2013, compared to $96.2 billion at December 31, 2012. Property, plant and equipment increased by $1.3 billion, as net additions of $2.9 billion and favorable currency translation differences of $0.2 billion exceeded depreciation and impairments of $1.8 billion. Goodwill decreased slightly to $31.0 billion as positive currency translation differences of $0.2 billion were more than offset by the decrease in goodwill of $0.3 billion attributable to the Diagnostics business, which has been reclassified into the disposal group held for sale. Financial and other non-current assets increased by $0.8 billion while intangible assets decreased by $2.5 billion since the beginning of the year to $27.8 billion as the amortization and impairments of $3.1 billion exceeded net additions of $0.6 billion.

Total current assets of $30.5 billion at December 31, 2013 increased by $2.5 billion compared to the prior year-end, driven by an increase in cash and cash equivalents of $1.1 billion and the separate disclosure of the current and non-current assets of the Diagnostics business divested in January 2014, amounting to $0.8 billion.

Trade receivable balances include sales to drug wholesalers, retailers, private health systems, government agencies, managed care providers, pharmacy benefit managers and government-supported healthcare systems. Novartis continues to monitor sovereign debt issues and economic conditions in Greece, Italy, Portugal, Spain (GIPS) and other countries and evaluates trade receivables in these countries for potential collection risks. Substantially all of the trade receivables from such countries are due directly from local governments or from government-funded entities. Deteriorating credit and economic conditions and other factors in these countries have resulted in, and may continue to result in an 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 receivables in future periods.

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 the GIPS countries. Should there be a substantial deterioration in our economic exposure, 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, 2013 and 2012:

	2013	2012
	$ m	$ m
Not overdue	8,650	8,584
Past due for not more than one month	509	552
Past due for more than one month but less than three months	303	321
Past due for more than three months but less than six months	259	301
Past due for more than six months but less than one year	263	205
Past due for more than one year	268	305
Provisions for doubtful trade receivables	(196)	(217)
Total trade receivables, net	**10,056**	**10,051**
Less assets of disposal group held for sale	(154)	
Total trade receivables excluding disposal group, net	**9,902**	**10,051**

With regard to the GIPS countries, the countries with the largest outstanding trade receivables exposure are Italy and Spain. Substantially all of the outstanding trade receivables from these countries are due directly from local governments or from government-funded entities. The movement in the

outstanding trade receivables from Italy and Spain during the year and the related outstanding trade receivables and provision at December 31, 2013 and 2012 is as follows:

Italy

	2013	2012
	$ m	$ m
Gross trade receivables at December 31	636	712
Past due for more than one year at December 31	55	68
Provision at December 31	43	41

Spain

	2013	2012
	$ m	$ m
Gross trade receivables at December 31	563	435
Past due for more than one year at December 31	111	6
Provision at December 31	22	5

The Government of Spain has established a plan, known as ICO 2, to help repay debts owed by local Spanish governmental authorities. A significant portion of the amounts due to Novartis from Spain that are past due for more than one year have been accepted into this plan. It is intended that payments will be made from this plan in 2014.

Other non-current liabilities amounted to $14.2 billion compared to $17.1 billion in the prior year. A major portion of this decrease of $2.9 billion arose from the decrease in the accrued liability for employee benefits related to our funded and unfunded defined benefit pension plans around the world, but principally in Switzerland and the US, as well as unfunded and funded US post-retirement medical benefit schemes. The net unfunded deficit of $4.2 billion related to the defined benefit schemes comprises actuarially determined liabilities of $25.9 billion partially offset by funded plan assets of $21.7 billion.

This deficit adjusted for the overfunding of certain plans, is recognized in our provisions and fluctuates considerably from time to time. This is due to the fact that the assets consist of both marketable securities and other investments which are valued at their current market value. The actuarially calculated post-employment defined benefit obligations of $25.9 billion have an average duration of 13.8 years and are extremely sensitive to movements in interest rates which are currently still rather low.

Trade payables of $6.1 billion and other current liabilities of $13.4 billion increased by $0.6 billion and $0.9 billion, respectively.

Included in other current liabilities are $2.5 billion relating to outstanding taxes. While there is some uncertainty about the final taxes to be assessed in our major countries, we consider this uncertainty to be limited since our tax assessments are generally relatively current. In our key countries, Switzerland and the US, assessments have been agreed by the tax authorities up to 2009, with the exception of one open US position in 2007.

The Group is exposed to a potential adverse devaluation risk on its intercompany funding and total investment in certain subsidiaries operating in countries with exchange control. The most significant country in this respect is Venezuela, where the Group has approximately $220 million of cash in the country, which is only slowly being approved for remittance outside the country. As a result, the Group is exposed to a potential income statement financial result devaluation loss on its total intercompany balances with subsidiaries in Venezuela and related net investments, which at December 31, 2013 amounted to approximately $340 million and $35 million, respectively. The Group used the official exchange rate as published by CADIVI (Venezuelan Commission for the Administration of Foreign

Currency) of VEF 4.3/$ until the devaluation on February 8, 2013 and VEF 6.3/$ since then for the consolidation of the financial statements of the Venezuelan subsidiaries.

The Group's total equity increased by $5.2 billion over the year to $74.5 billion at December 31, 2013, compared to $69.3 billion at the end of 2012. This increase was driven by net income of $9.3 billion and actuarial gains of $1.5 billion. Movements related to share-based compensation and favorable currency translation differences contributed an additional $1.1 billion and $0.7 billion, respectively. This more than offset the $6.1 billion dividend payment for 2012 and the net purchases of treasury shares of $1.3 billion.

Liquidity

Financial year 2013

As a result of the strong cash flow generation, our liquidity increased over the year to $9.2 billion at December 31, 2013 from $8.1 billion at the prior year-end even after repayment of the $2.0 billion bond that matured in April 2013 and consists of $6.7 billion cash and cash equivalents and of $2.5 billion marketable securities, commodities and derivative financial instruments. In 2012, liquidity included cash and cash equivalent of $5.5 billion and marketable securities and financial instruments of $2.6 billion.

Financial year 2012

As a result of the strong cash flow generation, the Group liquidity increased over the year to $8.1 billion at December 31, 2012 from $5.1 billion at the prior year end even after repayment of the CHF 700 million bond that matured in 2012. The Group liquidity consists of $5.5 billion cash and cash equivalents and of $2.6 billion marketable securities and derivative financial instruments.

Net Debt

Financial year 2013

As of December 31, 2013, our net debt decreased to $8.8 billion compared to $11.6 billion at the end of 2012.

The total gross financial debt decreased by $1.7 billion and amounted to $18.0 billion compared to $19.7 billion in 2012.

Long-term financial debt amounted to $11.2 billion which is a reduction of $2.6 billion compared to 2012, mainly due to a bond and loan reclassification to short-term financial debt which are due within the next twelve months. Long-term financial debt consists of bonds of $10.9 billion and other long-term financial debt of $0.3 billion. For further details see "Item 18. Financial Statements—Note 19".

Short-term debt increased by $0.9 billion from $5.9 billion at December 31, 2012 to $6.8 billion at December 31, 2013, mainly due to the $2.6 billion reclassification of long-term financial debt and a repayment of a $2.0 billion bond in the second quarter of 2013 totaling a net increase of $0.6 billion. In addition, commercial paper and other short-term debts, including derivatives, increased by $0.3 billion. Overall short-term debt consists of commercial paper of $1.0 billion, the current portion of long-term debt of $2.6 billion and other short-term borrowings (including derivatives) of $3.2 billion. For further details see "Item 18. Financial Statements—Note 21".

The Group's debt/equity ratio improved slightly to 0.24:1 at December 31, 2013 compared to 0.28:1 at the beginning of the year.

In 2013, the long-term credit rating for the Company continues to be double-A (Moody's Aa3; Standard & Poor's AA−; Fitch AA). Moody's downgraded Novartis from Aa2 to Aa3 in February 2013.

Financial year 2012

As of December 31, 2012, our net debt decreased to $11.6 billion at the end of 2012 from a net debt of $15.2 billion at the end of 2011.

Total gross financial debt was $19.7 billion, as compared with $20.2 billion as of December 31, 2011. Total gross financial debt in 2012 decreased compared to 2011 by $0.5 billion.

We have $14.8 billion of bonds and Medium Term Notes and other long-term financial loans of $1.0 billion outstanding at December 31, 2012. We had $13.5 billion of bonds and Medium Term Notes and other long-term financial loans of $1.1 billion outstanding at December 31, 2011. For details on the maturity profile of debt, currency and interest rate structure, see "Item 18. Financial Statements—Note 19".

We had current debt (excluding the current portion of non-current debt) of $3.9 billion as compared with $5.6 billion as of December 31, 2011. This current debt consists mainly of $2.8 billion (2011: $3.4 billion) in other bank and financial debt, including interest bearing employee accounts; $963 million (2011: $2.2 billion) of commercial paper, and $162 million (2011: $30 million) of other current debt. For further details see "Item 18. Financial Statements—Note 21".

Credit agencies in 2012 maintained their ratings for Novartis. Moody's rated the Group as Aa2 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 2012 year-end debt/equity ratio decreased to 0.28:1 from 0.31:1 in 2011 principally due to less current financial debt being outstanding under the commercial paper programs.

We are in compliance with all covenants or other requirements set forth in our financing agreements. We do not have any rating downgrade triggers that would accelerate maturity of our debt. For details of the maturity profile of debt, currency and interest rate structure, see "Item 18. Financial Statements—Note 19".

Net debt/liquidity constitutes a non-IFRS financial measure, which means that it should not be interpreted as a measure determined under IFRS. Net debt/liquidity is presented as additional information as it is a useful indicator of the Group's ability to meet financial commitments and to invest in new strategic opportunities, including strengthening its balance sheet.

We use 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. These derivatives are expected to offset the change in value or cash flow of the hedged item. Our objective is to reduce fluctuations in earnings and cash flows.

We use US dollar as our reporting currency and we are therefore exposed to foreign exchange movements, primarily in European, Japanese and other Asian and Latin American currencies. Consequently, we enter into various contracts which change in value as foreign exchange rates change, to preserve the value of assets, commitments and anticipated transactions. We also use forward contracts and foreign currency option contracts to hedge certain anticipated net revenues in foreign currencies.

The following table provides a breakdown of liquid funds and financial debt by currency:

	Liquidity in % 2013	Liquidity in % 2012	Liquidity in % 2011	Financial debt in % 2013	Financial debt in % 2012	Financial debt in % 2011
$	80	72	60	58	63	56
EUR	1	5	2	12	11	13
CHF	11	15	33	15	13	15
JPY				11	10	14
Other	8	8	5	4	3	2
	100	100	100	100	100	100

Free Cash Flow

Novartis defines free cash flow as cash flow from operating activities adjusted for 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 also not taken into account to determine free cash flow.

Free cash flow is presented as additional information because Novartis considers it is a useful indicator of the Group's ability to operate without relying on additional borrowing or the use of existing cash. Free cash flow is a measure of the net cash generated that is available for debt repayment, investment in strategic opportunities and for returning to shareholders. The Group uses free cash flow as a performance measure when making internal comparisons of the results of divisions. Free cash flow constitutes a non-IFRS financial measure, which means that it should not be interpreted as a measure determined under IFRS. Free cash flow is not intended to be a substitute measure for cash flow from operating activities (as determined under IFRS).

The following is a summary of the Group's free cash flow:

	2013	Restated 2012[1]	Restated 2011[1]
	$ m	$ m	$ m
Operating income	**10,910**	**11,193**	**10,780**
Reversal of non-cash items			
Depreciation, amortization and impairments	4,990	4,954	5,980
Change in provisions and other non-current liabilities	807	857	1,513
Other	335	452	272
Operating income adjusted for non-cash items	**17,042**	**17,456**	**18,545**
Interest and other financial receipts	541	689	470
Interest and other financial payments	(631)	(616)	(687)
Taxes paid	(2,024)	(2,022)	(2,435)
Payments out of provisions and other net cash movements in non-current liabilities	(1,015)	(1,173)	(1,471)
Change in inventory and trade receivables less trade payables	(562)	183	(492)
Change in other net current assets and other operating cash flow items	(177)	(323)	379
Cash flows from operating activities	**13,174**	**14,194**	**14,309**
Purchase of property, plant & equipment	(3,064)	(2,698)	(2,167)
Purchase of intangible assets	(507)	(370)	(220)
Purchase of financial assets	(165)	(180)	(139)
Purchase of other non-current assets	(39)	(57)	(48)
Proceeds from sales of property, plant & equipment	60	92	61
Proceeds from sales of intangible assets	154	163	643
Proceeds from sales of financial assets	315	221	59
Proceeds from sales of other non-current assets	17	18	5
Group free cash flow	**9,945**	**11,383**	**12,503**

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see "Item 18. Financial Statements—Note 30").

Financial year 2013

In 2013, the free cash flow of $9.9 billion was 13% below the prior year. Aside from the significant currency impact, major reasons for the decline were increased trade receivables and higher capital investments in manufacturing and research facilities.

The free cash flow was primarily used for the dividend payments to shareholders of $6.1 billion as well as a $1.3 billion net repayment of financial debt and for treasury share purchases of net $1.2 billion. This allocation reflects management's intention to optimize shareholder returns whilst at the same time reinvesting surplus funds in the business to promote future growth.

Financial year 2012

In 2012, the free cash flow of $11.4 billion was $1.1 billion lower than the prior year mainly on account of higher investments in property, plant and equipment of $2.7 billion compared to $2.2 billion (4.8% of net sales compared to 3.7% in 2011) and lower divestment proceeds which amounted to $0.5 billion in 2012 compared to $0.8 billion in 2011.

This free cash flow was primarily used for dividend payments to shareholders of $6.0 billion (compared to $5.4 billion in 2011), for the recent acquisitions which on a net cash basis amounted to $1.7 billion (mainly Fougera Pharmaceuticals Inc.), and for the reduction of net debt of $3.5 billion. This

allocation reflects Management's intention to optimize shareholders returns whilst at the same time reinvesting surplus funds in the business to promote future growth.

Financial year 2011

Free cash flow for 2011 was $12.5 billion, which represents an increase of 1% or $0.2 billion compared to 2010. Main contributors were Pharmaceuticals with $10.8 billion followed by Alcon with $3.5 billion while other divisions contributed in total $2.1 billion. Corporate had a free cash outflow of $3.9 billion mainly on account of interest and tax payments. Free cash flow of $12.5 billion was deployed for dividend payments of $5.4 billion and share repurchases of $5.9 billion (including $2.4 billion repurchased indirectly via Alcon, Inc. to reduce the dilutive impact of the subsequent merger of Alcon, Inc. into Novartis AG). In total, dividends and share repurchases utilized 90% of the Group's 2011 free cash flow.

Capital Resources

Funding of the Alcon transaction—2011

During 2011, prior to the merger of Alcon, Inc. into Novartis AG on April 8, 4.8% of the non-controlling interests in Alcon, Inc. were acquired for $2.4 billion.

Completion of the acquisition of the outstanding 18.6% interest in Alcon on April 8, 2011 and subsequent merger, resulted in the issuance of Novartis shares with a fair value of $9.2 billion and a contingent value payment of $0.5 billion.

The final purchase price allocation was completed in 2011 and resulted in a fair value of net identifiable assets of $27.0 billion and goodwill of $18.0 billion. Also, the excess of the value exchanged for these 2011 transactions over the recorded value of the non-controlling interest together with merger related transaction costs resulted in a reduction in equity of $5.7 billion.

For additional information, see "Item 18, Financial Statements—Notes 2 and 24".

Share Repurchase Plans

During 2013, approximately 34.3 million treasury shares were delivered as a result of options exercised related to employee participation programs and related transactions. Novartis is mitigating the dilutive impact of these programs on an ongoing basis and repurchased 33.3 million of its shares for $2.5 billion in 2013 on the first trading line on the SIX. These shares will be kept as treasury shares principally for future employee participation program purposes. An additional 4.8 million shares have been purchased from employees for $0.4 billion. On November 22, 2013, Novartis announced to buy back shares on the second trading line up to an amount of $5.0 billion spread over two years. This repurchase is done on the basis of a decision made by the Annual General meeting 2008 for a share buy-back program of up to CHF 10.0 billion, of which CHF 7.5 billion is still available. 2.2 million shares have already been purchased in 2013 as part of this buy-back.

During 2012, Novartis repurchased 4.6 million of its shares for $240 million on the first trading line on the SIX. These shares will be kept as treasury shares principally for future employee participation program purposes. Following the approval of our shareholders at the Annual General Meeting on February 23, 2012, all shares repurchased on the second trading line of the SIX during 2011 were cancelled (total of 39.4 million shares, which corresponded to 1.4% of the registered Novartis share capital), and the share capital was reduced accordingly.

In 2011, Novartis has carried out the share repurchases committed to at the time of the Alcon merger announcement. These share repurchases amounted to $5.3 billion including the purchases of $2.4 billion of Alcon shares, a contingent value payment of $0.5 billion and repurchases of $2.4 billion of Novartis

shares (39.4 million shares). All of these Novartis shares were repurchased on the second trading line during the first six months of 2011. In addition, in the second half of 2011, Novartis repurchased $1.1 billion (20.4 million shares) of own shares on the first trading line. These shares will be kept as treasury shares to mostly cover future employee participation programs.

No shares were cancelled in 2011 as none had been repurchased in the 12 months to December 2010.

Treasury shares

At December 31, 2013, our holding of treasury shares amounted to 280.1 million shares or 10% of the total number of issued shares. Approximately 149 million treasury shares are held in entities that limit their availability for use.

At December 31, 2012, our holding of treasury shares amounted to 285.6 million shares or 11% of the total number of issued shares. Approximately 175 million treasury shares are held in entities that limit their availability for use.

At December 31, 2011, our holding of treasury shares amounted to 338.9 million shares or 12% of the total number of issued shares. Approximately 181 million treasury shares are held in entities that limit their availability for use.

Bonds

In April 2013, a 1.9% US Dollar bond of $2.0 billion was repaid.

In September 2012, a $2.0 billion bond offering was completed in the United States. Two tranches were issued, one 10-year bond of $1.5 billion with a coupon of 2.4% and the other at $0.5 billion 30-year bond with a coupon of 3.7%. Further, a 3.5% Swiss franc bond of CHF 700 million was repaid in 2012.

In 2011 no bonds were issued or repaid.

Direct Share Purchase Plans

Since 2004, Novartis has offered a Direct Share Purchase Plan to investors residing in Switzerland, Liechtenstein, France and the United Kingdom. This plan was the first of its kind in Europe. It offers an easy and inexpensive way for investors to directly purchase Novartis registered shares and for them to be held at no cost in a deposit account with SIX SAG AG. At the beginning of 2013, Novartis closed the plan for non-Swiss residents. At the end of 2013, a total of 7946 shareholders were enrolled in this plan.

Liquidity/Short-term Funding—2013 and 2012

We continuously track our liquidity position and asset/liability profile. This involves modeling cash flow maturity profiles based on both historical experiences and contractual expectations to project our liquidity requirements. We seek to preserve prudent liquidity and funding capabilities.

We are not aware of significant demands to change our level of liquidity needed to support our normal business activities. We make use of various borrowing facilities provided by several financial institutions. We also successfully issued various bonds in 2010 and 2012. In addition, we raised funds through our commercial paper programs. We have no commitments from repurchase or securities lending transactions at the end of 2013.

An overview of the movements in our current financial debt and related interest rates is set forth below:

	December 31	Average interest rate at year end	Average balance during the year	Average interest rate during the year	Maximum balance during the year
	$ m	%	$ m	%	$ m
2013					
Interest-bearing accounts of associates	1,718	0.96	1,658	1.00	1,718
Other bank and financial debt	1,323	4.27	1,485	3.77	1,940
Commercial paper	1,042	0.24	1,935	0.13	3,867
Current portion of non-current financial debt	2,590	na	3,319	na	4,007
Fair value of derivative financial instruments	103	na	118	na	259
Total current financial debt	**6,776**		**8,515**		**11,791**
2012					
Interest-bearing accounts of associates	1,541	1.03	1,490	1.06	1,554
Other bank and financial debt	1,270	3.99	1,662	3.05	2,049
Commercial paper	963	0.66	3,738	0.17	6,287
Current portion of non-current financial debt	2,009	na	1,597	na	2,009
Fair value of derivative financial instruments	162	na	102	na	219
Total current financial debt	**5,945**		**8,589**		**12,118**

na = not applicable or available

Interest bearing accounts of associates relate to employee deposits in CHF from the compensation of associates employed by Swiss entities (actual interest rate: 1%). Other bank and financial debt refer to usual lending and overdraft facilities.

5.C Research & Development, Patents and Licenses

Our R&D spending totaled $9.9 billion, $9.3 billion and $9.6 billion ($9.7 billion, $9.1 billion and $9.2 billion excluding impairments and amortization charges) for the years 2013, 2012 and 2011, respectively. Each of our divisions has its own R&D and patents policies. Our divisions have numerous products in various stages of development. For further information on these policies and these products in development, see "Item 4. Information on the Company—4.B Business Overview."

As described in the "Risk Factors" section and elsewhere in this Form 20-F, our drug development efforts are subject to the risks and uncertainties inherent in any new drug development program. Due to the risks and uncertainties involved in progressing through pre-clinical development and clinical trials, and the time and cost involved in obtaining regulatory approvals, among other factors, we cannot reasonably estimate the timing, completion dates, and costs, or range of costs, of our drug development program, or of the development of any particular development compound, see "Item 3. Key Information—3.D Risk Factors." In addition, for a description of the research and development process for the development of new drugs and our other products, and the regulatory process for their approval, see "Item 4. Information on the Company—4.B Business Overview."

5.D Trend Information

Please see "—5.A Operating Results—Factors Affecting Results of Operations" and "Item 4, Information on the Company—4.B Business Overview" for trend information.

5.E Off-Balance Sheet Arrangements

We have no unconsolidated special purpose financing or partnership entities or other off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources, that is material to investors, see also "Item 18. Financial Statements—Note 28" and matters described in "Item 5.F Aggregate Contractual Obligations".

5.F Tabular Disclosure of Contractual Obligations

The following table summarizes our contractual obligations and other commercial commitments at December 31, 2013 as well as the effect these obligations and commitments are expected to have on our liquidity and cash flow in future periods:

	Payments due by period				
	Total	**Less than 1 year**	**2-3 years**	**4-5 years**	**After 5 years**
	$ m	**$ m**	**$ m**	**$ m**	**$ m**
Non-current financial debt[1]	**13,832**	2,590	5,183	18	6,041
Operating leases	**2,882**	336	384	193	1,969
Unfunded pensions and other post-employment benefit plans	**2,067**	113	235	257	1,462
Research & Development					
—Unconditional commitments	**350**	131	123	64	32
—Potential milestone commitments	**1,881**	326	497	523	535
Purchase commitments					
—Property, plant & equipment	**1,021**	751	261	9	
Total contractual cash obligations	**22,033**	**4,247**	**6,683**	**1,064**	**10,039**

(1) including current portion of non-current financial debt of $2,590 million.

We expect to fund the R&D and purchase commitments with internally generated resources.

For other contingencies, see "Item 4. Information on the Company—4.D Property, Plants and Equipment—Environmental Matters", "Item 8. Financial Information—8.A Consolidated Statements and Other Financial Information" and "Item 18. Financial Statements—Note 20".

Item 6. Directors, Senior Management and Employees

Item 6.A Directors and Senior Management

Board of Directors

Joerg Reinhardt, Ph.D.
German, age 57

Function at Novartis AG Joerg Reinhardt, Ph.D., has been Chairman of the Board of Directors of Novartis AG since August 2013. He is Chairman of the Chairman's Committee.

Other activities Mr. Reinhardt previously served as chairman of the board of management and the executive committee of Bayer HealthCare. Prior to that, he served as Chief Operating Officer of Novartis from 2008 to 2010, and as Head of the Vaccines and Diagnostics Division of Novartis from 2006 to 2008. He also served as Chairman of the Board of the Genomics Institute of the Novartis Research Foundation in the United States from 2000 to 2010, as a member of the supervisory board of MorphoSys AG in Germany from 2001 to 2004, and as a member of the board of directors of Lonza Group AG in Switzerland from 2012 to 2013. He is currently a member of the Council of the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA).

Professional background Mr. Reinhardt graduated with a Ph.D. in pharmaceutical sciences from Saarland University in Germany. He joined Sandoz Pharma Ltd. in 1982 and held various positions including Head of Development. Following the merger that created Novartis in 1996, Mr. Reinhardt became Head of Preclinical Development and Project Management at Novartis, and assumed the position of Head of Pharmaceutical Development in 1999.

Key knowledge/experience *Leadership, Global and Industry experience*—former chairman of global healthcare company; former COO of Novartis and former Chairman of Novartis research institution; former board member of leading biotechnology company; former board member of global supplier for pharmaceutical, healthcare, and life sciences industries; member of global non-profit representing pharmaceutical industry.

Ulrich Lehner, Ph.D.
German, age 67

Function at Novartis AG Ulrich Lehner, Ph.D., has been a member of the Board of Directors since 2002. He qualifies as an independent Non-Executive Director. He serves as Vice Chairman, and is a member of the Chairman's Committee, the Audit and Compliance Committee, the Risk Committee, the Compensation Committee, and the Corporate Governance and Nomination Committee. The Board of Directors has appointed him as Audit Committee Financial Expert.

Other activities Mr. Lehner is a member of the shareholders' committee of Henkel AG & Co. KGaA, chairman of the supervisory board of Deutsche Telekom AG as well as ThyssenKrupp AG and serves as a member of the supervisory boards of E.ON AG and Porsche Automobil Holding SE, all in Germany. He is also a member of the advisory board of Dr. August Oetker KG and Krombacher Brauerei, both in Germany.

Professional background Mr. Lehner graduated in business administration and mechanical engineering from the Darmstadt University of Technology, Germany, in 1975. From 1975 to 1981, he was an auditor with KPMG Deutsche Treuhand-Gesellschaft AG in Duesseldorf. In 1981, he joined Henkel KGaA. After heading the controlling department of Fried. Krupp GmbH in Germany from 1983 to 1986, Mr. Lehner returned to Henkel as finance director. From 1991 to 1994, he headed Henkel Asia-Pacific Ltd. in Hong Kong, and from 1995 to 2000, he served as executive vice president, finance/

logistics, of Henkel KGaA. From 2000 to 2008, Mr. Lehner served as chairman of the management board of Henkel KGaA.

Key knowledge/experience *Leadership and Global experience*—chairman of supervisory board of global telecommunications and technology company; former chairman of management board of global consumer goods company. *Industry experience*—member of committees of global companies in the energy, automotive, consumer goods, telecommunications and manufacturing technology areas.

Enrico Vanni, Ph.D.
Swiss, age 62

Function at Novartis AG Enrico Vanni, Ph.D., has been a member of the Board of Directors since 2011. He qualifies as an independent Non-Executive Director. He serves as Vice Chairman, and Chairman of the Compensation Committee. He is also a member of the Chairman's Committee and the Audit and Compliance Committee.

Other activities Since his retirement as director of McKinsey & Company in 2007, Mr. Vanni has been an independent consultant. He is currently a member of several boards of directors, in industries from healthcare to private banking, for nonlisted companies including Eclosion2, Denzler & Partners SA and Banque Privée BCP (Suisse) SA, all based in Switzerland. He is also a board member of Advanced Oncotherapy plc in England and of Lombard Odier SA 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; as well as a Master of Business Administration from INSEAD in Fontainebleau, France. He began his career as a research engineer at International Business Machines Corp. in California, United States, and joined McKinsey & Company in Zurich in 1980. He managed the Geneva office for McKinsey from 1988 to 2004, and consulted for companies in the pharmaceutical, consumer and finance sectors. He led McKinsey's European pharmaceutical practice and served as a member of the firm's partner review committee prior to his retirement in 2007. As an independent consultant, Mr. Vanni has continued to support leaders of pharmaceutical and biotechnology companies on core strategic challenges facing the healthcare industry.

Key knowledge/experience *Global Industry experience*—senior consultant of global pharmaceutical/biotech and consumer goods companies, and financial institutions. *Science experience*—research engineer at technology company and manager of projects in global pharmaceutical R&D. *Leadership experience*—office management of global consultant company and leadership of its European pharmaceutical practice.

Dimitri Azar, M.D., MBA
American, age 54

Function at Novartis AG Dimitri Azar, M.D., has been a member of the Board of Directors since February 2012. He qualifies as an independent Non-Executive Director and is a member of the Audit and Compliance 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 sits on the board of trustees of the Chicago Ophthalmological Society and the Association of Research in Vision and Ophthalmology. Dr. Azar is a member of the American Ophthalmological Society and holds committee positions with the American Academy of Ophthalmology.

Professional background Dr. Azar began his career at the American University Medical Center, Beirut, Lebanon, and completed his fellowship and residency training at the Massachusetts Eye and Ear Infirmary at Harvard Medical School in the United States. His research on matrix-metalloproteinases in corneal wound healing and angiogenesis has been funded by the National Institutes of Health since 1993.

Dr. Azar practiced at the Wilmer Ophthalmologic Institute at The Johns Hopkins Hospital School of Medicine, then returned to the Massachusetts Eye and Ear Infirmary as director of the cornea and external disease. He became professor of ophthalmology with tenure at Harvard Medical School in 2003. Dr. Azar holds an Executive Master of Business Administration from the University of Chicago, Booth School of Business.

Key knowledge/experience *Leadership, Healthcare and Education experience*—dean and professor of leading US university medical school. *Biomedical Science experience*—federally funded clinician-scientist and research fellowship recipient.

Verena A. Briner, M.D.
Swiss, age 62

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.

Other activities Dr. Briner is professor of internal medicine at the University of Basel, Switzerland, and chief medical officer and head of the department of medicine at the Lucerne Cantonal Hospital in Switzerland. 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 supervisory group for personalized medicine of the Centre for Technology Assessment TA-SWISS. She also is a member and former president of the Swiss Society of Internal Medicine and a member of the board of trustees of Patientensicherheit Schweiz.

Professional background Dr. Briner graduated with an M.D. from the University of Basel in 1978, and has a specialized degree in internal medicine and nephrology from the Swiss Medical Association. She has received several prestigious scholarships and scientific grants, including the President's Grant of the Society of General Internal Medicine in 2011, and is an honorary fellow of the American College of Physicians, the European Federation of Internal Medicine, the Polish Association of Internal Medicine, and the Swiss Society of General Internal Medicine.

Key knowledge/experience *Leadership and Healthcare experience*—chief medical officer and department head at leading Swiss hospital; former president of Swiss medical society; member of various medical and ethical institutions and commissions. *Education experience*—professor at leading Swiss university.

William Brody, M.D., Ph.D.
American, age 69

Function at Novartis AG William Brody, M.D., Ph.D., has been a member of the Board of Directors since 2009. He qualifies as an independent Non-Executive Director and is a member of the Compensation Committee.

Other activities Dr. Brody is president of the Salk Institute for Biological Studies, La Jolla, California, United States. He is also a member of the boards of directors of the U.S.-based International Business Machines Corp. and Kool Smiles Inc., and the mutual funds boards of T. Rowe Price. He is a member of numerous professional associations, and also serves on the advisory boards of various government and nonprofit organizations.

Professional background Dr. Brody earned his bachelor's and master's degrees in electrical engineering from the Massachusetts Institute of Technology before completing his M.D. and Ph.D. at Stanford University, all in the United States. Following training in cardiovascular surgery and radiology he held various academic positions, including professor for radiology and electrical engineering at Stanford University, and director of the department of radiology at The Johns Hopkins University. From 1996 to 2009, he was president of The Johns Hopkins University, and since 2009, president of the Salk Institute for

Biological Studies in the United States. He is a member of the US National Academy of Engineering and the Institute of Medicine.

Key knowledge/experience *Leadership, Biomedical Science, Healthcare and Education experience*—president of leading US scientific research institution; former president of leading US university. *Global, Engineering and Technology experience*—former board member of global technology company.

Srikant Datar, Ph.D.
American, age 60

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 Chairman's Committee, the Risk Committee and the Compensation Committee. The Board of Directors has appointed him as Audit Committee Financial Expert.

Other activities Mr. Datar is Arthur Lowes Dickinson Professor at the Graduate School of Business Administration at Harvard University. He is also a member of the boards of directors of ICF International Inc., Stryker Corp. and T-Mobile US, all in the United States, and of HCL Technologies in India.

Professional background Mr. Datar graduated with distinction in mathematics and economics from the University of Bombay, India, in 1973. He is a Chartered Accountant, and holds two master's degrees and a doctorate from Stanford University. Mr. Datar has worked as an accountant and planner in industry, and as a professor at Carnegie Mellon University, Stanford University and Harvard University, all in the United States. His research interests are in the areas of cost management, measurement of productivity, new product development, time-based competition, incentives, and performance evaluation. He is the author of many scientific publications and has received several academic awards and honors. Mr. Datar has advised and worked with numerous companies in research, development and training.

Key knowledge/experience—*Leadership and Education experience*—former senior associate dean and current professor of leading US university. *Global and Industry experience*—board member of global professional services firm, leading global medical technology company, major US telecommunications company and global information technology company.

Ann Fudge
American, age 62

Function at Novartis AG Ann Fudge has been a member of the Board of Directors since 2008. She qualifies as an independent Non-Executive Director. She is a member of the Risk Committee, the Compensation Committee, and the Corporate Governance and Nomination Committee.

Other activities Ms. Fudge serves on the boards of directors of General Electric Co. in the United States; Unilever NV, London and Rotterdam, Netherlands; and Infosys Ltd., India. She is a trustee of the New York-based Rockefeller Foundation, and is chairman of the US Programs Advisory Panel of the Bill & Melinda Gates Foundation. Ms. Fudge is further a member of the Harvard University Corporation Committee on Finance. She is also on the board of the Council on Foreign Relations.

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

Key knowledge/experience *Leadership and Marketing experience*—former chairman and CEO of global marketing communications company; former president of leading consumer products business unit.

Global and Industry experience—board member of global technology company and global consumer goods company.

Pierre Landolt, Ph.D.
Swiss, age 66

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. He is Chairman of the Corporate Governance and Nomination Committee.

Other activities Mr. Landolt is currently chairman of the Sandoz Family Foundation and oversees the development of the foundation in several investment fields. He is also chairman of the Swiss private bank Landolt & Cie SA. In Switzerland, he is chairman of Emasan AG and Vaucher Manufacture Fleurier SA, and vice chairman of Parmigiani Fleurier SA. He is a member of the board of EcoCarbone SAS, France, and Amazentis SA, Switzerland. He is also vice chairman of the Montreux Jazz Festival Foundation. In Brazil, Mr. Landolt serves as president of AxialPar Ltda. and Moco Agropecuaria Ltda., the Instituto Fazenda Tamanduá and the Instituto Estrela de Fomento ao Microcrédito.

Professional background Mr. Landolt graduated with a bachelor's degree in law from the University of Paris—Assas. From 1974 to 1976 he worked for Sandoz Brazil. In 1977 he acquired an agricultural estate in the semi-arid Northeast Region of Brazil, and over 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 EcoCarbone SAS, a company active in the design and development of carbon-sequestration processes. In 2007 he cofounded Amazentis SA, a startup company active in the convergence space of medication and nutrition. In 2011 Mr. Landolt received the title of Docteur ès Sciences Économiques Honoris Causa from the University of Lausanne in Switzerland.

Key knowledge/experience—*Banking and Industry experience; International and Emerging Market experience*—chairman of private bank; chairman and vice chairman of luxury goods companies. *Leadership and Global experience*—chairman of large family investment holding.

Andreas von Planta, Ph.D.
Swiss, age 58

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 is a member of the Audit and Compliance Committee as well as the Corporate Governance and Nomination Committee.

Other activities Mr. von Planta is chairman of the Schweizerische National-Versicherungs-Gesellschaft AG and a board member of Holcim Ltd., both in Switzerland. He is also a board member of various Swiss subsidiaries of foreign companies and other nonlisted Swiss companies. He is a member of the Board of Editors of the "Swiss Review of Business Law" and is a former chairman of the Geneva Association of Business Law. Mr. von Planta 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, Switzerland, and an LL.M. from Columbia University School of Law, New York, United States. He passed his bar examinations in Basel in 1982. Since 1983 he has lived in Geneva and worked for the law firm Lenz & Staehelin, where he became a partner in 1988. His areas of specialization include corporate law, corporate governance, corporate finance, company reorganizations, and mergers and acquisitions.

Key knowledge/experience *Leadership and Global experience*—chairman of insurance company; board member of global construction materials manufacturer. *Industry experience*—partner of leading Swiss law firm.

Charles L. Sawyers, M.D.
American, age 54

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.

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 president of the American Association of Cancer Research and former president of the American Society for Clinical Investigation. He also is a member of the US National Academy of Sciences and Institute of Medicine.

Professional background Dr. Sawyers received his M.D. from the Johns Hopkins School of Medicine in the United States, and worked at the Jonsson Comprehensive Cancer Center at the University of California, Los Angeles for nearly 18 years before joining Memorial Sloan-Kettering in 2006. An internationally acclaimed cancer researcher, he co-developed the Novartis cancer drug *Gleevec*/*Glivec*, and has received numerous honors and awards, including the Lasker-DeBakey Clinical Medical Research Award in 2009. Dr. Sawyers is a member of the Scientific Advisory Board of Agios Pharmaceuticals, Inc., Cambridge, MA/USA.

Key knowledge/experience *Leadership, Healthcare and Science experience*—program chair at leading cancer treatment and research institution; member of US cancer advisory board; president of scientific organization; former president of medical honor society. *Education experience*—professor at leading US university.

Dr. Ing. Wendelin Wiedeking
German, age 61

Function at Novartis AG Dr. Ing. Wendelin Wiedeking has been a member of the Board of Directors since 2003. He qualifies as an independent Non-Executive Director. He is a member of the Risk Committee and the Corporate Governance and Nomination Committee.

Other activities Mr. Wiedeking was chairman of the executive board of Porsche Automobil Holding SE and of Dr. Ing. h.c. F. Porsche AG, both in Germany, until July 2009. Since then he has been an entrepreneur.

Professional background Mr. Wiedeking graduated in 1978 with a degree in mechanical engineering from the Rhine-Westphalian College of Advanced Technology in Germany, where he also worked as a scientific assistant in the machine tool laboratory. His professional career began in 1983 in Germany as director's assistant in the production and materials management area of Dr. Ing. h.c. F. Porsche AG in Stuttgart-Zuffenhausen. In 1988, he moved to Glyco Metall-Werke KG in Wiesbaden as division manager, where he advanced by 1990 to the position of CEO and chairman of the board of management of Glyco AG. In 1991, he returned to Dr. Ing. h.c. F. Porsche AG as member of the executive board for production. A year later, the supervisory board appointed him spokesman of the executive board (CEO), then chairman in 1993.

Key knowledge/experience *Leadership, Global and Industry experience*—former chairman and CEO of global automotive company. *Engineering and Technology experience*—former chairman and CEO of manufacturing supply company.

William T. Winters
British/American, age 52

Function at Novartis AG William T. Winters has been a member of the Board of Directors since 2013. He qualifies as an independent Non-Executive Director.

Other activities Mr. Winters is chairman and CEO of Renshaw Bay, an alternative asset management and advisory company based in London. He is a former member of the UK Independent Commission on Banking, and served as co-CEO of JPMorgan's investment banking business from 2003 to 2010.

Professional background Mr. Winters received his bachelor's degree from Colgate University and his Masters of Business Administration from the Wharton School at the University of Pennsylvania. He joined JPMorgan in 1983 and held management roles across several market areas and in corporate finance. Mr. Winters serves on the boards of Colgate University and the International Rescue Committee, both in the United States, and of Pension Insurance Corporation, the Young Vic Theatre and The Print Room, all in London. He was awarded the title of Commander of the Order of the British Empire (CBE) in 2013.

Key knowledge/experience *Leadership and Global experience*—chairman and CEO of alternative asset management and advisory company; former co-CEO of investment banking at global financial services firm. *Education experience*—board member of leading US university.

Rolf M. Zinkernagel, M.D.
Swiss, age 69

Function at Novartis AG Rolf M. Zinkernagel, M.D., has been a member of the Board of Directors since 1999. He qualifies as an independent Non-Executive Director. He is a member of the Corporate Governance and Nomination Committee.

Other activities Dr. Zinkernagel was vice president of the International Union of Immunological Societies until 2010. He is a member of the scientific advisory boards of Bio-Alliance AG, Germany; Aravis General Partner Ltd., Cayman Islands and Switzerland; Telormedix, Switzerland; X-Biotech, Canada; Novimmune, Switzerland; Cancevir, Switzerland; MannKind, United States; and the Biomedical Sciences International Advisory Council, Singapore. Dr. Zinkernagel is also a science consultant to Chilka Ltd., Cayman Islands and Ganymed, Germany.

Professional background Dr. Zinkernagel graduated from the University of Basel, Switzerland, with an M.D. in 1970. From 1992 to 2008, he was a professor and director of the Institute of Experimental Immunology at the University of Zurich, and after retirement in 2008 continues to be active at the University of Zurich. Dr. Zinkernagel has received many awards and prizes for his work and contribution to science, notably the Nobel Prize in medicine, which he was awarded in 1996.

Key knowledge/experience *Biomedical Science and Education* experience—former professor and director at leading Swiss university. *Leadership and Global experience*—member of scientific advisory boards of numerous global biotech companies; member of major international research councils.

Executive Committee

Joseph Jimenez
American, age 54

Joseph Jimenez has been Chief Executive Officer (CEO) of Novartis since 2010. Mr. Jimenez is responsible for leading the company's diversified healthcare portfolio of leading businesses in innovative pharmaceuticals, eye care, generics, vaccines and diagnostics, OTC and animal health. Previously Mr. Jimenez served as Division Head, Novartis Pharmaceuticals. He led the transformation of the pharmaceutical portfolio to balance mass market and specialty products, and significantly increased the

percentage of sales from newly launched products. Mr. Jimenez also worked to realign the division's commercial approach to focus on the individual needs of customers, and incorporated more technological tools to better connect with patients and customers. Mr. Jimenez joined Novartis in April 2007 as Division Head, Novartis Consumer Health. Previously, he served as president and CEO of the North America business for the H.J. Heinz Co. and as president and CEO of Heinz in Europe from 2002 to 2006. Prior to joining Novartis, he was a nonexecutive director of AstraZeneca PLC, United Kingdom, from 2002 to 2007. He was also an adviser for the private equity organization Blackstone Group in the United States. Mr. Jimenez is a member of the board of directors of Colgate-Palmolive Co., New York. He graduated in 1982 with a bachelor's degree from Stanford University and in 1984 with a Master of Business Administration from the University of California, Berkeley, both in the United States.

Juergen Brokatzky-Geiger, Ph.D.
German, age 61

Juergen Brokatzky-Geiger, Ph.D., has been Head of Human Resources of Novartis since 2003. He is a member of the Executive Committee of Novartis. Mr. Brokatzky-Geiger joined Ciba-Geigy Ltd. in 1983 as a Ph.D. chemist in the Pharmaceuticals Division in Switzerland. After a job rotation in the United States, he held positions of increasing responsibility in Research and Development (R&D), including Group Leader of Process R&D, Head of Process R&D, and Head of Process Development and Pilot Plant Operations. During the merger of Ciba-Geigy and Sandoz in 1996, Mr. Brokatzky-Geiger was appointed Integration Officer of Technical Operations. He later became the Head of Chemical and Analytical Development, and served as the Global Head of Technical R&D from 1999 to 2003. Mr. Brokatzky-Geiger is a member of the board of Bachem AG in Switzerland. He graduated with a Ph.D. in chemistry from the University of Freiburg, Germany, in 1982.

Kevin Buehler
American, age 56

Kevin Buehler has been Division Head, Alcon, since April 2011. He is a member of the Executive Committee of Novartis. Mr. Buehler was president and chief executive officer of Alcon Inc. from 2009 to 2011. He began his career with Alcon in 1984 as a regional sales manager in the Consumer Products Division, and held positions of increasing responsibility before being named director of sales and marketing. In 1996, he became director of Alcon's US Managed Care and Falcon Generic Pharmaceutical groups, and became vice president in 1998. The following year he returned to the US Consumer Products Division as vice president and general manager. Mr. Buehler moved to the International Division in 2002 as vice president and regional manager, Latin America and Caribbean. He was later named area vice president, Latin America, Canada, Australia and Far East. Mr. Buehler also served as senior vice president, global markets and as chief marketing officer. Prior to joining Alcon, he worked for The Gillette Co. and Snyder Drug Stores, both in the United States. Mr. Buehler holds a bachelor's degree from Carroll University in Waukesha, Wisconsin, in the United States, with concentrations in business administration and political science. He completed the Harvard Program for Management Development in 1993.

Felix R. Ehrat, Ph.D.
Swiss, age 56

Felix R. Ehrat, Ph.D., has been Group General Counsel since October 2011. He is a member of the Executive Committee of Novartis. Mr. Ehrat is a leading practitioner of corporate, banking, and mergers and acquisitions law, as well as an expert in corporate governance and arbitration. He started his career as an associate with Baer & Karrer Ltd. in Zurich in 1987, became partner in 1992, and advanced to senior partner (2003 to 2011) and executive chairman of the board (2007 to 2011) of the firm. Mr. Ehrat is chairman of Globalance Bank AG in Switzerland and a board member of Geberit AG, economiesuisse (Swiss Business Federation) and organizations in the cultural field. Previously, he was, among other

things, chairman of Banca del Gottardo and a board member of Julius Baer Holding AG, Austriamicrosystems AG, Charles Voegele Holding AG and Carlo Gavazzi Holding AG. Mr. Ehrat was admitted to the Zurich bar in 1985 and received his doctorate of law from the University of Zurich in 1990. In 1986, he completed an 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 Committee on Corporate and M&A Law from 2007 to 2008, and Association Internationale des Jeunes Avocats, where he was president from 1998 to 1999. Current memberships include the Swiss Bar Association, the Zurich Bar Association and the Swiss Arbitration Association.

David Epstein
American, age 52

David Epstein has been Division Head, Novartis Pharmaceuticals, since 2010. He is a member of the Executive Committee of Novartis. Prior to his current appointment, Mr. Epstein served as Head of Novartis Oncology for nearly 10 years. Before joining Novartis, Mr. Epstein was an associate in the strategy practice of the consulting firm Booz Allen Hamilton Inc. in the United States. He joined Sandoz, a predecessor company of Novartis, in 1989 and held various leadership positions of increasing responsibility for the Company, including Chief Operating Officer of Novartis Pharmaceuticals Corporation in the United States and Head of Novartis Specialty Medicines. Mr. Epstein graduated with a bachelor's degree in pharmacy from The Ernest Mario School of Pharmacy at Rutgers, The State University of New Jersey, in 1984, and with a Master of Business Administration in finance and marketing from New York's Columbia University Graduate School of Business in 1987.

Mark C. Fishman, M.D.
American, age 62

Mark C. Fishman, M.D., has been President of the Novartis Institutes for BioMedical Research (NIBR) since 2002. He is a member of the Executive Committee of Novartis. Before joining Novartis in 2002, Dr. Fishman was chief of cardiology and director of the Cardiovascular Research Center at Massachusetts General Hospital, and was professor of medicine at Harvard Medical School, both in the United States. Dr. Fishman completed his internal medicine residency, chief residency and cardiology training at Massachusetts General Hospital. Dr. Fishman graduated with a bachelor's degree from Yale College in 1972 and an M.D. from Harvard Medical School in 1976. He has been honored with many awards and distinguished lectureships and serves on the council of the Institute of Medicine of the National Academies in the United States. Additionally, he is a fellow of the American Academy of Arts and Sciences, also in the United States.

Jeff George
American, age 40

Jeff George has been Division Head, Sandoz, since 2008. He is a member of the Executive Committee of Novartis. Mr. George joined the Novartis Vaccines and Diagnostics Division in 2007 as Head of Commercial Operations for Western and Eastern Europe. He then advanced to Head of Emerging Markets for the Middle East, Africa, Southeast Asia and CIS at Novartis Pharmaceuticals. Before joining Novartis, Mr. George was a senior director of strategy and business development at Gap Inc., San Francisco, United States. From 2001 to 2004, he was an engagement manager with McKinsey & Company, also in San Francisco. Mr. George received a Master of Business Administration from Harvard University in 2001. He graduated in 1999 with a master's degree from The Johns Hopkins University's School of Advanced International Studies, where he studied international economics and emerging markets political economy. In 1996, he received his bachelor's degree in international relations from Carleton College in Northfield, Minnesota, in the United States.

George Gunn, MRCVS
British, age 63

George Gunn has been Division Head, Novartis Animal Health, and Head, Corporate Responsibility, since March 2011. He is a member of the Executive Committee of Novartis. Before joining Novartis, Mr. Gunn was president of Pharmacia Animal Health, based in the United States. Previously, he spent more than 15 years in positions of increasing responsibility in healthcare companies. He worked as a veterinary surgeon for nine years before entering the industry. Mr. Gunn joined Novartis in 2003 as Head of Novartis Animal Health, North America. In January 2004, he assumed his position as Head of the Animal Health Business Unit. In addition to this role, he was Division Head, Novartis Consumer Health, from 2008 to 2011. Mr. Gunn graduated with a bachelor of veterinary medicine and surgery degree from the Royal (Dick) School of Veterinary Studies in the United Kingdom in 1973. He graduated with a diploma in veterinary state medicine from the same school in 1978. In 2008, he received an honorary doctorate in veterinary medicine and surgery from the University of Edinburgh, Scotland.

Harry Kirsch
German, age 48

Harry Kirsch has been Chief Financial Officer (CFO) of Novartis and a permanent attendee of the Executive Committee of Novartis since May 1, 2013. As of January 1, 2014, 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 pharmaceuticals business. Prior to that, he held finance positions in different categories of P&G's consumer goods business, technical operations, and Global Business Services organization. Mr. Kirsch studied industrial engineering and economics at the University of Karlsruhe in Germany (''Diplom Wirtschaftsingenieur'').

Brian McNamara
American, age 47

Brian McNamara has been Division Head, Novartis OTC, since February 2012. He is a member of the Executive Committee of Novartis. Prior to this role, Mr. McNamara served as President, Americas Region, for Novartis OTC. Since joining Novartis OTC in 2004 as Senior Vice President and General Manager of Novartis OTC North America, he has worked on a number of strategic initiatives. He also served as President of Novartis OTC Europe from 2007 until 2010. Mr. McNamara began his career at Procter & Gamble Co., Cincinnati, United States, where he gained extensive experience in consumer and brand marketing, product supply, and customer leadership. He was previously on the board of directors and executive committee of the Consumer Healthcare Products Association in the United States, and was s a board member of the Association of the European Self-Medication Industry, where he served as chairman of the economic affairs committee. Mr. McNamara received a Master of Business Administration in finance from the University of Cincinnati and a bachelor's degree in electrical engineering from Union College, both in the United States.

Andrin Oswald, M.D.
Swiss, age 42

Andrin Oswald, M.D., has been Division Head, Novartis Vaccines and Diagnostics, since 2008. He is a member of the Executive Committee of Novartis. In September 2013, Dr. Oswald also became Chairman of the Board of the Novartis Foundation for Sustainable Development. Previously, Dr. Oswald was CEO of Speedel Holding AG and Global Head of Pharmaceutical Development Franchises in the Novartis Pharmaceuticals Division, both in Switzerland. Dr. Oswald joined Novartis in 2005 as Assistant to the Chairman and CEO. Before his appointment as Head of Development Franchises, he served as Head of the Country Pharmaceuticals Organization (CPO) and Country President for Novartis in South Korea. Dr. Oswald joined Novartis from McKinsey & Company, Switzerland, where he was an associate principal. He is a board member of the Global Health Investment Corporation (GHIC), an Investment Committee member of the Global Health Investment Fund (GHIF), and a member of the Global Agenda Council on Catastrophic Risks of the World Economic Forum. Between 2002 and 2003, he also served as a delegate of the International Committee of the Red Cross (ICRC) to Nepal. Dr. Oswald holds a doctorate in medicine from the University of Geneva.

Item 6.B Compensation

Novartis aspires to be an employer of choice and to attract and retain best-in-class talent around the world.

Our compensation plans are designed to support our position as a preeminent global healthcare company. They provide competitive compensation and benefits for world-class talent in a competitive market. They are aligned with our business performance objectives, which are key to our sustained success while being transparent, coherent and consistent with our pay-for-performance philosophy. Our compensation system aims to align with shareholders' interests and encourage innovation and entrepreneurship, while at the same time, deter excessive risk-taking at the expense of the long-term condition of the Group.

The Compensation Report describes our compensation system and philosophy, and provides details on how compensation related to 2013 performance.

DEAR SHAREHOLDER

It is with pleasure that I, as Chair of the Compensation Committee of the Board of Directors, introduce you to the 2013 Compensation Report of Novartis AG.

In 2013, this Committee welcomed Ann Fudge as a new member and has undertaken significant work to:

– improve disclosure in our 2013 Compensation Report;

– finalize the design of our new executive compensation system; and

– conduct a review of our Board compensation system.

During our extensive discussions with shareholders and proxy advisors in 2013, we learned that you would like a better understanding of how our executive incentive plans function, including their link to business strategy and alignment with shareholders' interests. We also learned that you would like more detail regarding how performance against Group targets translated into the incentive amounts earned by our CEO.

In response, we have substantially expanded disclosure in our report regarding how our incentive plans work, including achievements against the 2013 financial targets underpinning our incentive plans. We have also shown how the incentive payouts of our CEO have been earned.

Overall, 2013 was a strong year for Novartis and for our shareholders. We performed above expectations, growing sales in all divisions. The Group met its guidance—which was raised twice during the year—and exceeded its financial targets, including exceeding specific targets in innovation. We also continued to improve in quality, compliance and customer satisfaction, and shareholders benefited with a significant increase in share price, as well as an increased dividend.

In 2013, the Committee concluded the strategic review of the Company's entire approach toward executive compensation that began in 2012. As shown by the positive outcome of the shareholder say-on-pay vote at the 2013 AGM, the Committee believes that shareholders welcome the overall design of the new executive compensation program for the members of the Executive Committee of Novartis (ECN), which will become effective in 2014.

The most important changes in the new compensation system are that we:

- aligned the performance measures underpinning our incentive plans directly to our business strategy (Innovation, Growth and Productivity), therefore ensuring that we drive the right priorities in our leadership team;
- simplified the program by eliminating share options, matching grants, and discretionary awards;
- reformatted the Annual Incentive into one integrated balanced scorecard that considers performance holistically against:
  - Group and divisional financial and innovation targets
  - individual financial and operational objectives
  - our values and behavior standards;
- removed our three-year time-vesting long-term incentive plan "Select" and implemented a three-year performance-vesting for both of our long-term incentive plans; and
- split the new total long-term incentive into two separate plans, which are each subject to a three-year performance period: one based on our Novartis Cash Value Added (NCVA, see definition in the section "Financial measure (Group Novartis Cash Value Added)" performance and results in innovation; the other based on our Total Shareholder Return measured against 12 other companies that form our healthcare peer group.

The new executive compensation program has the full support of our Board. We believe it will provide a competitive advantage to Novartis in the marketplace for executive talent, is aligned with shareholders' interests and will support our aspiration to be the world's most respected and successful healthcare company.

During 2013, the Compensation Committee, together with its independent advisor, also undertook a detailed review of Board compensation and has approved a revised policy, which is outlined in section "Board compensation 2014". It reflects some of our recent governance changes, including the removal of the Chairman's Committee. It aims to better align our Board compensation to the current levels of our international healthcare peer group, and other Swiss industrial companies; the latter being relevant due to the extensive responsibilities that a Swiss board has, including but not limited to setting strategy, ensuring its implementation, making organizational decisions, carrying responsibility for financial performance and integrity, and overseeing senior management.

The new Swiss law regarding Say-on-Pay (the Minder Ordinance) was released on November 20, 2013 and entered into force on January 1, 2014. This will lead to the individual election by the shareholders of the Chairman, the members of the Board and of the Compensation Committee for a term of one year at the 2014 AGM. Other key changes, such as the amendment of the Articles of Association, will have to be implemented in 2015. In the meantime, at the 2014 AGM, we are requesting your endorsement in an advisory capacity on two compensation-related votes. The first vote is on the aggregate amount of Board

compensation from the 2014 AGM to the 2015 AGM. The second vote is on the aggregate amount of fixed and variable compensation earned by members of our Executive Committee for the 2013 business year.

On behalf of Novartis and the Compensation Committee, I would like to thank you for your support and your feedback, which I consider extremely valuable in driving improvements in our compensation systems. I invite you to send your comments on our new program to me at the following email address: investor.relations@novartis.com.

Respectfully,

Enrico Vanni, Ph.D.,

Chairman of the Compensation Committee

January 28, 2014

SUMMARY

Company Performance 2013

2013 was a strong year for Novartis, growing sales, operating income and net income (in constant currencies). Novartis met its raised guidance across all parameters especially versus our start-of-year outlook. We performed above expectations as a result of strong growth product momentum and growing sales in all divisions, even when excluding the lower than expected impact of generic competition.

Overall, growth products performance offset the impact of sales lost to generics of $2.2 billion (mainly due to *Diovan* and *Zometa/Aclasta*). Novartis achieved the significant number of eleven blockbusters (products with sales above $1 billion), ten of which were in the Pharmaceuticals division and one with sales across Pharmaceuticals, Consumer Health and Sandoz. Productivity gains allowed for continued investments behind growth products. Currency had a negative impact (−2% on net sales, −8% on operating income) due to a weak yen and weak emerging market currencies against the US dollar. The table below outlines results versus prior year in constant currencies as well as in US dollars:

	Growth in constant currencies versus prior year	Growth in $ versus prior year
Net sales	+4%	+2%
Operating income	+5%	−3%
Net income	+7%	−1%
EPS	+6%	−2%

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

In addition, we performed well on our three strategic priorities:

Innovation

- In 2013, we secured 18 approvals[1]. Our Pharmaceuticals division alone achieved 13 approvals, including *Ultibro Breezhaler* in Europe, and *TOBI Podhaler* in the US. We also secured key approvals in Alcon (including *Jetrea* for vitreo-macular traction in Europe), and in Vaccines and Diagnostics (including *Bexsero* for meningococcal disease B in Europe).
- Our Pharmaceuticals division filed successfully for AIN457 in psoriasis and omalizumab in chronic spontaneous urticaria.
- We achieved three FDA breakthrough therapy designations in 2013, placing us at the top of our industry for designations for distinct new molecular entities.

Growth

- Net sales grew 4% in constant currency. Excluding the impact of patent expiries, underlying sales grew 8% in constant currencies with underlying core operating income up 15% in constant currency.
- Growth products grew 15% in US dollars, contributing 31% of total Group net sales (up from 28% in 2012).
- Sales in emerging markets grew 10% in constant currencies.

Productivity

- We achieved $2.8 billion in productivity cost savings, which exceeded our start of year projections.
- We continued to drive our manufacturing footprint program to increase capacity utilization and reduce cost. So far, we have divested or closed 20 manufacturing sites.[2]

Further, we drove cross-divisional procurement savings, outsourcing and offshoring, reduced infrastructure cost in research and optimized our returns via proactive and decisive resource allocation. We also made productivity gains through global business service hubs.

In 2013, we continued to improve in quality, compliance and customer satisfaction. We are also proud to have been recognized as one of the 25 best multinational employers by Great Place to Work® Institute, and we ranked top pharmaceutical company in Fortune's World's Most Admired Companies for the third year in a row.

Finally, our shareholders benefited from a share price increase of 24% (from CHF 57.45 at December 31, 2012 to CHF 71.20 at December 31, 2013) and the dividend of CHF 2.30 per share paid in the year, resulting in a Total Shareholder Return of 28% for the year (in Swiss francs, 32% in US dollars).

Details regarding 2013 performance against Group targets can be found in section "Executive compensation 2013, Annual incentive".

CEO 2013 Compensation

As outlined above, overall the Company exceeded start-of-year expectations, and the Board recognized that the CEO met or exceeded most of his individual objectives, including his financial targets that were set in constant currencies. However, given that we saw a decline, compared to the prior year, in reported operating income and free cash flow, the Compensation Committee and the CEO determined

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1 Major approvals across Pharmaceuticals, Alcon and Vaccines and Diagnostics Divisions in the EU and US

2 Includes Pharmaceuticals manufacturing site in Suffern, NY (USA) as announced in January 2014

together, that he would waive a portion of his variable compensation for the performance year 2013. The Board of Directors supported this decision.

This resulted in our CEO earning a total compensation (salary and variable compensation including benefits) of CHF 13.2 million for the year 2013, which is at the same level to the compensation he received for the prior year (2012), as detailed in the table below.

CEO COMPENSATION 2013 VERSUS 2012 (CHF EQUIVALENT VALUE)

		2013	2012
		Total Compensation (CHF '000)	Total Compensation (CHF '000)
Fixed compensation and benefits			
Annual Base Compensation		2,055	2,025
Pension Benefits		176	161
Other Benefits		94	129
Variable compensation			
Annual Incentive		1,061	1,370
Leveraged Share Savings Plan	Nominal value of potential future share match (5-year time-vesting)	0	0
Equity Plan Select	Nominal value at grant, time-vesting over 3 years	3,714	4,796
Long-Term Performance Plan	Value at vesting date	6,126	4,747
Total Compensation		**13,226**	**13,228**

In authorizing this pay, we are mindful of our responsibility to the Company and to you, its owners, to provide pay opportunities that are competitive in the marketplace for all our key associates, including our CEO, and then to make sure that realized pay relates to our performance and the individual contributions of each ECN member to that performance.

EXECUTIVE COMPENSATION PHILOSOPHY & PRINCIPLES

Novartis Compensation Philosophy

Our compensation philosophy aims to ensure that executives are rewarded according to their success in implementing the Company strategy and their contribution to Company performance. Our key strategic priorities of innovation, growth and productivity form the basis of the performance measures established for both the annual and long-term incentives.

Our compensation system aims to foster personal accountability based on clear individual and business objectives, and also underlines the importance of competence and integrity as drivers of sustainable business success.

A significant portion of total compensation varies with performance, with an emphasis on long-term equity-based compensation to further align the interests of executives with those of our shareholders.

Our compensation systems are designed to meet the following 5 key compensation principles:

Pay for performance

Variable compensation is tied directly to the achievement of strategic Company goals, as measured by specific, pre-determined, short-term and long-term business performance targets. Ambitious targets are set to drive sustained superior Company performance.

Business ethics

All associates are expected to achieve their business results through ethical practices, reflected in our Code of Conduct. The Novartis Values and Behaviors are an integral part of our performance measures.

Balanced rewards to create sustainable value

Compensation programs are designed to strike a balance between incentivizing talented associates while delivering sustainable returns to our shareholders. Incentive programs consider the long-term life cycle that characterizes our industry, in particular, the innovation and development challenges.

Alignment with shareholders

We ensure that the interests of leaders are fully aligned with those of our shareholders. Minimum ownership guidelines are in place for all key senior executives of the Group, and compensation outcomes are tied directly to the performance of Novartis shares.

Competitive compensation

Compensation at competitive levels is essential to attract, retain and motivate talented and diverse associates. Our compensation structure and target levels are comparable to relevant benchmarks at peer companies.

Executive Compensation Benchmarking

To attract and retain key talent, it is important for us to offer competitive compensation levels on a global basis. In line with our compensation philosophy, associates achieving their objectives are generally awarded target compensation at a level comparable to the median level of the relevant benchmarks. In the event of under- or over-performance, the actual compensation may be lower or higher than the benchmark median. In the event of exceptional and sustained performance, actual compensation may be awarded at the top quartile of the relevant benchmark in order to encourage and reward superior performance.

The Compensation Committee reviews the compensation of the CEO and of the members of the Executive Committee annually and compares these to the relevant compensation level of similar positions at peer companies. For this purpose, we use benchmark data from well-known market data providers and other relevant data sources. In particular, we review the mix of short-term and long-term incentives, the mix of cash and share-based compensation, and the level of deferred compensation as well as current compensation policies. Further, the data analysis conducted by the market data providers takes into account factors such as recent market trends and best practices in compensation. The Compensation Committee's independent advisor reviews and evaluates the data received, and provides independent research and advice for the CEO's target compensation, which comes to the Compensation Committee without the advance knowledge or consent of the CEO.

For the CEO and the members of the Executive Committee, the comparator companies consist of competitors in the healthcare industry which are operating on a global basis and have the same or similar business model, business size, international competition, and need for talent and skills.

BENCHMARK COMPARATOR COMPANIES

Astra Zeneca	GlaxoSmithKline	Roche
Sanofi	Abbott	AbbVie
Amgen	Bristol-Myers Squibb	Eli Lilly & Company
Johnson & Johnson	Merck & Co.	Pfizer

Benchmark criteria (in $ billion)	Novartis[1]	Benchmark Peers Median[2]
Net sales/Revenue	57.9	40.9
Market capitalization	194.2	108.3
Operating income[3]	10.9	8.2
Net income	9.3	6.2
Total assets	126.3	63.0

(1) As of December 31, 2013

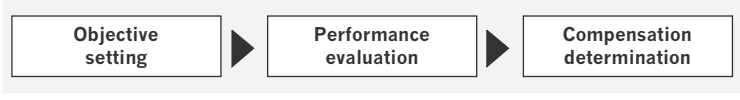
(2) As at last reported quarter end except for market capitalization, which is as of December 31, 2013.

(3) Operating income for Novartis, earnings before interest and tax for peer companies

Source: ThomsonFinancial, trailing four quarters

EXECUTIVE PERFORMANCE MANAGEMENT PROCESS

To foster a high-performance culture, we apply a uniform People Performance Management Process worldwide, based on quantitative and qualitative criteria, including Novartis Values and Behaviors. Novartis associates, including the CEO and the members of the Executive Committee, are subject to a three-tier formal process.



Objective Setting

Objective setting for the CEO

At the beginning of each performance year, the Chairman meets with the CEO to discuss his objectives for the coming year following a balanced scorecard approach. The Board of Directors reviews and approves these objectives and ensures that they are in line with our goals of fostering sustainable performance, balancing short- and long-term goals, and not rewarding inappropriate or excessive risk taking at the expense of the long-term condition of the Group.

Details of the individual objectives for the CEO for 2013 are in section "Executive compensation 2013, Annual incentive". Details of the long-term performance targets under LTPP are in section "Executive Compensation 2013, Long-Term Performance Plan".

Objective Setting for the Members of the Executive Committee

At the beginning of each performance year, the CEO and the members of the Executive Committee that report to him determine together the business objectives and respective metrics applicable to each of the divisional and global functional leaders. The CEO then presents the business objectives of the members of the Executive Committee to the Board of Directors for approval.

Performance Evaluation

Performance evaluation for the CEO

The Board of Directors periodically assesses the Group business performance and progress of the CEO against his objectives and incentive plan targets. At the mid-year performance review, the performance of the CEO is reviewed by the Chairman. For the year-end review, the CEO prepares and presents to the Chairman, and later to the Board of Directors, the actual results against the previously agreed-upon objectives, taking into account the audited financial results as well as an assessment of the extent to which he is a role model for 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. This assessment contributes to the rating used for individual performance under the Annual Incentive and Equity Plan "Select".

Process for performance evaluation of the members of the Executive Committee

For the mid-year review, the performance of members of the Executive Committee is reviewed by the CEO and then discussed with the Chairman. For the year-end review, the Board of Directors meets in January with the CEO to review and discuss the performance of the members of the Executive Committee for the previous year, taking into account the financial results, the level of achievement of financial and non-financial objectives, as well as adherence to the Novartis Values and Behaviors and the general economic and business environment. In addition, the Board of Directors periodically assesses the Group and divisional business performance and progress of the members of the Executive Committee against their objectives.

Compensation Determination

Compensation determination for the CEO

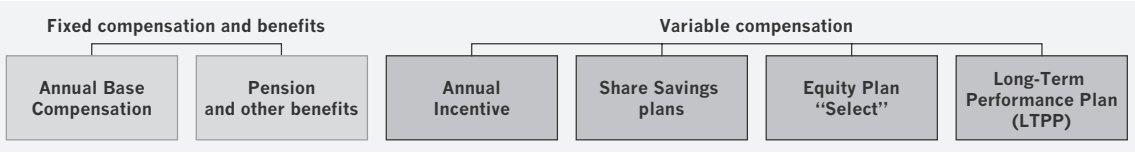
Based on the performance evaluation made by the Board of Directors, the Compensation Committee decides at its January meeting on the CEO's total compensation for the prior year and the target compensation for the coming year without the presence of the CEO. In reaching its decision, the Compensation Committee takes into account incentive plan calculated payouts, as well as other relevant information, including available benchmark information and the advice of the Compensation Committee's independent advisor.

Compensation determination for the members of the Executive Committee

In the presence of the CEO and taking into consideration his recommendations, the Compensation Committee decides, in January, on the variable compensation for the prior year and the target compensation of the members of the Executive Committee for the coming year.

EXECUTIVE COMPENSATION 2013

2013 is the last year in which the current executive compensation system, as described below, is in place. Our 2013 executive compensation system consists of the following components:



Annual Base Compensation

Overview

The level of base compensation reflects each associate's key areas of responsibilities, job characteristics, seniority, experience and skill sets. It is paid in cash, typically monthly, and is set according to local practice, designed to provide our associates with fixed compensation comparable to that offered by our peer companies.

In general, base compensation is reviewed annually, and any increases reflect both merit based on performance, as well as market movements.

2013 CEO Outcome

Following a review of market conditions as well as his performance, the CEO's annual base compensation was increased to CHF 2,060,500, as of March 1, 2013, which represented an increase of 1.5% versus 2012.

Pension and other Benefits

Overview

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 of pension and healthcare benefits provided to associates is country-specific, influenced by local market practice and regulations, and regularly reviewed.

Our policy is to change from defined-benefit (DB) pension plans to defined-contribution (DC) pension plans. All the major plans have now been aligned with our benefits strategy as far as reasonably practicable.

We may provide other benefits in a specific country according to local market practice and regulations, including length-of-service awards and perquisites. Associates who have been transferred on an international assignment also receive benefits in line with our policies.

2013 CEO outcome

As for the other ECN members, the pension and the level of benefits provided to our CEO are the same as those provided to other salaried associates in the relevant country of employment. During 2013, the Company contributed CHF 176,071 into the Swiss pension plans, and CHF 93,652 in other benefits.

Annual Incentive

Overview

The Annual Incentive ensures that over a single financial year, associates focus on their performance against three factors:

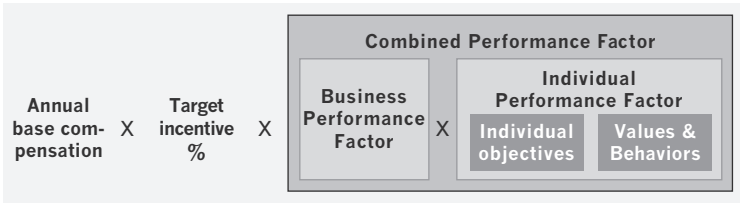
1. Group and divisional financial and innovation performance measures;
2. Individual financial and operational objectives, set according to specific roles; and
3. The Novartis Values and Behaviors.

Measures for the Annual Incentive have been selected because they define, in a balanced way, our success in implementing strategy and driving short-term business performance.

We define a target incentive as a percentage of base compensation for each participating associate at the beginning of each performance period—traditionally the start of each calendar year. Depending on the role and the level of responsibility of the associates, target incentive percentages may reach up to 60% of base compensation. For members of the Executive Committee, the Annual Incentive represents between 13% and 23% of their total variable compensation at target.

Performance measures

The Annual Incentive formula is outlined below:



The Business Performance Factor is based on the Company's achievement against key business financial and innovation performance measures, which are defined and weighted according to strategic priorities at the Group, divisional, regional or country level. Targets may include net sales, operating income, free cash flow, market presence and milestones in research and development.

The Individual Performance Factor comprises two separate elements. The first element is based on the achievement against individually set financial and non-financial associates' objectives. Depending on functional responsibility, non-financial objectives typically include innovation; product launches; successful implementation of growth and productivity initiatives; process improvements; leadership and people management; and successful acquisitions, disposals and licensing transactions. The second element ensures that the associate's performance is achieved in line with the highest standards in business conduct, as outlined in the Novartis Values and Behaviors. Our leaders are expected to live up to these behaviors on a daily basis, and to inspire other associates to do the same.

The Individual Performance Factor is determined according to a pre-defined matrix based on the associate's evaluated performance against the two elements. The Business Performance Factor and Individual Performance Factor may range from 0–150% and have equal weighting. No awards are granted for performance ratings below a certain threshold.

The Combined Performance Factor is derived by multiplying the Individual and Business Performance Factors, and is subject to a cap at 200% of target.

Form of award

In principle, the Annual Incentive is paid in cash following the achievement of the yearly objectives. However, a number of associates in certain countries and certain key executives worldwide are encouraged to invest their Annual Incentive in a share savings plan. Details of the Novartis share savings plans are in section "Executive compensation 2013, Novartis Share Savings Plans".

2013 CEO outcome

The following is a description of the CEO's performance in 2013, including the Group Business Performance Factor, his Individual Performance Factor, and the resulting amount of his Annual Incentive.

2013 CEO Business Performance Factor:

The CEO is measured against the Group Business Performance Factor of the Group. The determination of the Group Business Performance Factor is based on four key performance measures: Group net income; Corporate net result (those financial elements controlled by Group, such as Corporate cost, taxes, financial income and expenses); Group free cash flow as a percentage of sales; and innovation.

All four performance measures have a threshold of achievement at 80% of target, below which a performance factor of zero would be awarded. The Committee has discretion to adjust for unplanned acquisitions or divestments, changes in accounting policies, income from associated companies, tax adjustments and other significant events not reflected in the targets. These adjustments can be positive, to give relief for unplanned expenses, as well as negative, to reverse unplanned income. All measures have a 1:5 payout leverage, where a 1% deviation in realization versus target leads to a 5% change in payout (e.g. a realization of 105% leads to a payout factor of 125% for a measure). The Business Performance Factor can range between 0–150%.

The table below shows the weighting of these measures and the financial targets, as well as the realization as a percentage of target for 2013. Financial targets are evaluated in constant currencies (cc) for the Annual Incentive.

Business Performance Factor for Group (including CEO)

Financial and innovation metrics	Weight	Target	Realization[1]
Group net income ($ m)	50%	7,969	
Net corporate result ($ m)	20%	(2,628)	
Group free cash flow as % of sales	20%	15.2%	
Weighted average of divisional performance	10%		
Total achievement approved by the Compensation Committee			**106%**

Resulting in a Business Performance Factor after 1:5 leverage of 130%

(1) Realization in constant currencies mainly adjusted for contribution from delayed generic competition from *Diovan* monotherapy in the US.

The Group performed well versus these targets established in constant currencies by the Board at the beginning of the year on all performance metrics even after adjusting for the lower than expected impact of generic competition. Group net income was ahead of target mainly due to strong operating income performance. The favorable impact from the delayed entry of generic competition for *Diovan* monotherapy in the US was excluded from the calculation of the Business Performance Factor. Group free cash flow as a percentage of sales was ahead of target due to higher operating income performance in all divisions. With regards to innovation, the Group performance is a reflection of a strong year in all divisions and at the Novartis Institutes of BioMedical Research.

The Group Business Performance Factor approved by the Compensation Committee for 2013 was 130%.

2013 CEO Individual Performance Factor

The CEO's individual objectives for 2013 were set by the Board based on a balanced scorecard with a mix of quantitative and qualitative targets for the Group in four key areas: financial performance, innovation and growth, organizational health, and customer satisfaction. In addition, the CEO was also assessed against our values and behaviors. Overall, the CEO's Individual Performance Factor is 110%. Below is a review of his 2013 performance in each area.

Specific financial targets for the CEO

In addition to the above business performance factors, the CEO's objectives for 2013 also included financial targets such as Group net sales, operating income, core operating income, net income, earnings per share, core earnings per share and free cash flow. The overall assessment against these metrics was above expectations set at the beginning of the year.

Innovation and growth

The CEO's objectives for 2013 included targets to extend our lead in innovation, accelerate growth and drive productivity. The innovation and growth targets are intended to deliver breakthroughs in areas of highest unmet medical needs, to help mitigate the effect of the expiration of certain patents, including *Diovan* (sales in 2012 were $4.4 billion), and to establish a sound platform for the long-term growth of the Group. Overall performance for the Group in 2013 exceeded the goals set by the Board.

Novartis invested $9.9 billion in research and development, significantly advancing our promising pipeline projects and securing major FDA and European approvals across our portfolio in 2013. Overall, regulatory approvals, submissions and Phase III clinical trials either met or exceeded targets. Three FDA breakthrough therapy designations were achieved: BYM338 indicated for sporadic inclusion body myositis, RLX030 in acute heart failure, and LDK378 in ALK positive non-small cell lung cancer. However, performance in innovation and growth fell short in two areas: the response to the competitive threat to *Lucentis* was delayed, as was public market reimbursement for *Bexsero* in the UK.

Our strong underlying sales growth (excluding patent expirations) more than offset the impact of generic competition. Net sales growth in emerging growth markets was also strong, up 10% (versus a growth rate of 6% in 2012) in constant currencies. In China, our net sales grew 23% in constant currencies.

Organizational health

The CEO's objectives for 2013 included goals for strengthening quality assurance, driving productivity, developing people, strengthening corporate responsibility, and enhancing the Group's reputation. In 2013, Novartis made a significant investment and strengthened measures toward achieving "quality beyond compliance". We completed 262 health authority inspections across our network, with 258 assessed as good or satisfactory. These included 31 inspections from the FDA, of which 28 were assessed as good or satisfactory. Notably, Novartis achieved compliant status for our Consumer Health plant in Lincoln, Nebraska, USA. Isolated quality issues remain at three manufacturing sites in the network, which Novartis is committed to address. Novartis also delivered savings of $1.5 billion from our procurement initiatives.

We continued to successfully implement the Corporate Responsibility strategy, as approved by the Board of Directors in 2012. Novartis continued to reach more patients by delivering Coartem without profit for malaria patients in endemic countries, and continuing to donate leprosy medicines through the WHO. Novartis also expanded Social Ventures, innovative business models that build local, sustainable capabilities for healthcare around the world.

We further deepened and broadened programs to strengthen our leadership, to develop talent and to renew our focus on employee engagement.

In organizational health, we were also disappointed by the isolated conflict of interest issues we faced in Japan, regarding historical valsartan investigator-initiated trials, which impacted our reputation. We are working closely with the Japanese Ministry of Health, Labor and Welfare to resolve these issues.

Customer satisfaction:

In 2013, our "Customers First" initiative to improve cross-divisional collaboration and better serve our customers' needs delivered incremental sales of more than $1 billion, exceeding the objective.

2013 CEO Combined Performance Factor

Following multiplication of the Group Business Performance Factor (130%) and the CEO's Individual Performance Factor (110%), the Combined Performance Factor for the CEO would have been 143%.

However, given that we saw a decline, compared to the prior year, in reported operating income and free cash flow, the Compensation Committee and the CEO determined together, that he would waive a portion of his variable compensation for the performance year 2013. The Board of Directors supported this decision.

The value of his Annual Incentive award was determined as follows:

Annual Incentive Formula for CEO

	Annual base salary (CHF 000)		target incentive %		Calculated Combined Performance Factor		Calculated award value prior to amount waived (CHF 000)		Amount waived (CHF 000)		Final award (CHF 000)
Annual Incentive	2,061	x	50%	x	143%	=	1,473	–	412	=	1,061

Novartis Share savings plans

Overview

Where available, associates have the choice to receive part or all of their Annual Incentive in the form of Novartis shares in lieu of cash, by participating in one of the Novartis share savings plans. As a reward for their participation, we match their investments in shares after a holding period of three or five years. Through participation in a share savings plan, our associates are incentivized to remain with Novartis for the long-term, while sharing in the future financial success of Novartis and further aligning with the long-term interests of our shareholders.

We currently have three share savings plans:

– Leveraged Share Savings Plan (LSSP): Worldwide, 27 key executives were invited to participate in LSSP based on their performance in 2013. Annual Incentive is invested in Novartis shares and is subject to a holding period of five years. At the end of the holding period, participants will receive one free matching share for every share invested;

– Employee Share Ownership Plan (ESOP): In Switzerland, ESOP is available to 13,751 associates. Participants in this plan may choose to receive their Annual Incentive (i) 100% in shares; (ii) 50% in shares and 50% in cash; or (iii) 100% in cash. At the end of a three-year holding period, each

participant will receive one free matching share for every two shares invested. A total of 6,321 associates chose to receive shares under ESOP for their performance in 2013; and

– United Kingdom Plan (ESOP UK): In the United Kingdom, 2,600 associates can invest up to 5% of their monthly base compensation in shares (up to a maximum of GBP 125) and may also be invited to invest all or part of their net Annual Incentive in shares. At the end of a three-year holding period, participants will receive one free matching share for every two shares invested. During 2013, 1,404 associates elected to participate in this plan.

Associates may participate in only one of these plans in any given year.

No shares are matched under these plans if an associate leaves Novartis prior to the end of the holding period for reasons other than retirement, disability or death, unless determined otherwise by the Compensation Committee (for example, in connection with a reorganization or divestment).

For those who have chosen to receive their Annual Incentive in shares, the number of shares awarded is determined by dividing the actual incentive amount by the closing price of the shares on the grant date.

Following shareholder approval at the 2013 AGM of the new executive compensation system, this is the last year that Executive Committee members are eligible to participate and receive awards under the share savings plans.

2013 CEO outcome

In 2013, the CEO was eligible to participate in either the Leveraged Share Savings Plan, or the Employee Share Ownership Plan. He decided not to participate in either plan.

Equity plan "Select"

Overview

The Equity Plan "Select" is a global equity incentive plan under which eligible associates may receive an annual award.

Under the Equity Plan "Select", we define a target incentive as a percentage of base compensation for each participating associate at the beginning of each performance period—traditionally the start of each calendar year. Depending on the role, including its focus on the long-term success of Novartis, target incentive percentages may reach up to 200% of base compensation. For members of the Executive Committee, Equity Plan "Select" represents between 37% and 57% of their total variable compensation at target.

Once the award has been granted, it is subject to a three-year vesting period. The long-term value of this award is tied to share price development, allowing executives to realize the long-term impact of their decisions and actions.

Following shareholder approval at the 2013 AGM of the new executive compensation system, this is the last year that members of the Executive Committee are eligible to receive an award under the plan.

Performance measures

For all executives, the Equity Plan "Select" award is subject to the same Combined Performance Factor as the Annual Incentive. Details of the measures contained within the Combined Performance Factor are in section "Executive compensation 2013, Annual incentive".

Awards are subject to a cap of 200% of target.

Form of award at grant

The Equity Plan "Select" allows participants to choose the form of their award. At grant, equity may be taken in the form of restricted shares or Restricted Share Units (RSUs). Tradable share options were removed as a choice under this plan from December 31, 2013.

Restricted shares: Each restricted share is entitled to voting rights and payment of dividends during the vesting period.

RSUs: 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 or voting rights, except in the United States where associates receive a dividend equivalent during the vesting period for 2010 and 2011 awards.

Tradable share options from former plan cycles: Tradable share options expire on their 10th anniversary from the grant date. Each tradable share option granted to associates 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 of the tradable share options granted since 2010 are shown in the table below:

TERMS OF SHARE OPTIONS

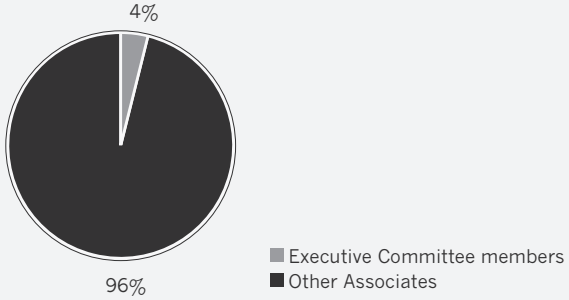
Grant year	Exercise price (CHF/$)	Vesting (years) (Switzerland/ other countries)	Term (years)
2013	61.70/66.07	3/3	10
2012	54.20/58.33	3/3	10
2011	54.70/57.07	2/3	10
2010	55.85/53.70	2/3	10

A total of 12,943 participants received 774,373 restricted shares and 6,449,201 RSUs under the Novartis Equity Plan "Select" for their performance in 2013, representing a participation rate of about 9.5% of all full-time-equivalent associates worldwide.

As of December 31, 2013, 89.5 million share options granted to associates were outstanding, covered by an equal number of shares and corresponding to 3.7% of the total number of outstanding Novartis shares.

Approximately 3.9% of the total equity value awarded under the Equity Plan "Select" was granted to the members of the Executive Committee.

2013 EQUITY GRANTED UNDER THE EQUITY PLAN "SELECT"



If a participant leaves Novartis for reasons other than retirement, disability or death, unvested shares, RSUs and share options are forfeited, unless determined otherwise by the Compensation Committee (for example, in connection with a reorganization or divestment).

Delivery at vesting

Following the vesting period, settlement is made in unrestricted Novartis shares or American Depositary Receipts (US only).

2013 CEO outcome

As for the Annual Incentive (described in section "Executive compensation 2013, Annual incentive"), the Compensation Committee and the CEO determined together that he would waive a portion of his variable compensation for 2013. The value of his award was determined as follows:

Select award formula for CEO

	Annual base salary (CHF 000)		target incentive %		Calculated Combined Performance Factor		Calculated award value prior to amount waived (CHF 000)		Amount waived (CHF 000)		Final award value (CHF 000)
Select	2,061	x	175%	x	143%	=	5,156[1]	–	1,442	=	3,714

(1) Select was awarded in the form of 50 361 RSUs (at a share price of CHF 73.75) which will vest in January 2017 provided that the CEO remains with the Group and complies with the regulations of the plan.

Long-Term Performance Plan (LTPP)

Overview

The Long-Term Performance Plan (LTPP) is an equity plan for key executives only, designed to drive long-term shareholder value creation. The LTPP is offered to selected executives, who are in key positions and have a significant impact on the long-term success of Novartis.

LTPP provides grants based on a target percentage of base compensation at the beginning of each plan cycle, and adjusted for changes in base compensation and target percentage increases during the plan cycle. Depending on the role and the level of responsibility of the associates, the target incentive percentages may reach up to 175% of base compensation. For members of the Executive Committee, LTPP represents between 20% and 44% of their total variable compensation at target.

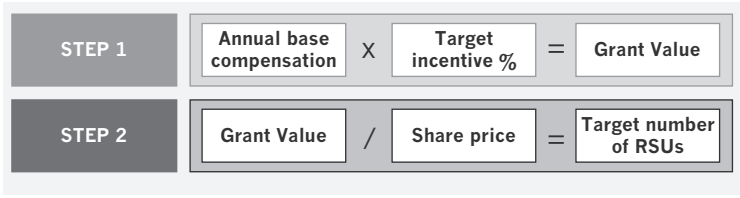
Performance measure

The LTPP payout is based on the achievement of long-term shareholder value creation. The rewards are based on rolling three-year Group performance objectives focused on the Novartis Economic Value Added (NVA) measured annually. The NVA is a measure of the Group's performance, taking into account Group operating income adjusted for interest, taxes and cost of capital charge. More simply, NVA is a measure of the value created for our shareholders over and above an expected return.

The performance ratio of a plan cycle is determined right after the end of the third plan year by adding together the annual NVA realizations of all plan years of the plan cycle, dividing by the sum of performance targets for each year of the plan cycle and expressing the result as a percentage. The LTPP only vests if the realized NVA for the 3 year cycle exceeds 80% of target NVA, and it is capped at 120% of target NVA.

Form of award at grant

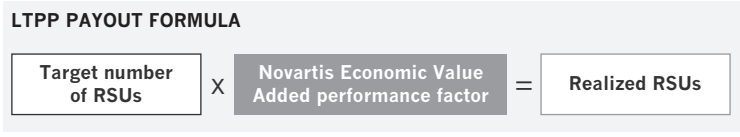
At the beginning of every performance period, plan participants are granted a target number of RSUs according to the following formula:



Delivery at vesting

At the end of the three-year performance period, the Compensation Committee multiplies the adjusted target number of RSUs by the performance factor approved by the Compensation Committee. RSUs are converted into unrestricted Novartis shares and immediately vested. In the United States, awards may also be delivered in cash under the US deferred compensation plan.

The NVA performance factor is based on a 1:5 payout curve, where a 1% deviation in realization versus target leads to a 5% change in payout (for example, a performance ratio of 105% leads to a performance factor of 125%). If performance over the three-year vesting period falls below 80% of target, no shares will vest. If the participant leaves Novartis during the performance period for reasons other than retirement, disability or death, none of the award vests, unless determined otherwise by the Compensation Committee (for example, in connection with a reorganization or divestment). The performance factor is capped at 200% of target, corresponding to an achievement of 20% above target.



130 key executives earned 494,522 shares under the LTPP 2014 cycle, based on NVA achievement that exceeded our target for the performance period 2011 to 2013.

2013 CEO outcome

For this cycle, NVA achievement was measured over a three-year performance period, 2011 to 2013, and was 5% ahead of the cumulative three-year target of $6.0 billion driven by strong operating income performance.

While the entire three-year cycle was impacted by significant negative exchange rate differences (more than $2.0 billion in total across the three years), which do not get adjusted in NVA, this was more than offset by strong commercial execution versus the strategy. Growth products performed consistently well throughout the cycle and the expansion into emerging markets was successfully implemented. Further, a continued focus on productivity initiatives—through procurement and resource allocation—has also made a significant impact on the NVA result. In arriving at our final NVA performance score, the Compensation Committee excluded the favorable impact from the delayed entry of generic competition for *Diovan* monotherapy in the US.

The following table shows the three-year cumulative NVA financial target, realization as a percentage of target and the NVA performance factor:

NVA performance factor

LTPP metrics	Cumulative 3 year target	Realization[1]	NVA performance factor
Group NVA ($ m)	5,998	105.2%	126%

(1) Realization mainly adjusted for 2013 NVA contribution arising from delayed generic competition from *Diovan* monotherapy in the US and 2011 impairment charges related to *Tekturna*/*Rasilez*

The CEO's LTPP award for the performance period 2011-2013 was determined as follows:

LTPP formula for CEO

	Target RSUs	x	NVA performance factor	=	Realized RSUs	Value (CHF '000)[1]
CEO	65,922	x	126%	=	83,062	6,126

(1) Based on the share price of CHF 73.75 at closing on award date.

The impact of the appreciation in our share price between the award date of the LTPP granted last year (share price of CHF 61.70) to our CEO and the award date of his LTPP for this year (share price of CHF 73.75) was CHF 1 million.

No future grants for the CEO and the other Executive Committee members will be made under this form of the LTPP, using the performance measure NVA. However two outstanding cycles will vest over 2014 and 2015 respectively.

Executive Compensation Tables

Compensation of members of the Executive Committee for 2013

The following table discloses the compensation earned by the CEO and other members of the Executive Committee for performance in 2013.

Alignment of reporting and performance

The compensation table synchronizes the reporting of annual compensation with the performance in the given year (i.e., all amounts awarded for performance in 2013 are disclosed in full). The column "Future LSSP/ESOP match" reflects shares to be awarded in the future if the Executive Committee member remains with Novartis for at least five or three years, respectively.

Valuation principles

In order to allow a comparison with other companies, shares, restricted shares, RSUs and ADRs are disclosed at their market value on the date of grant. Market value is the quoted closing share price at that date. The market value of share options is calculated using an option pricing valuation model as at the grant date.

EXECUTIVE COMMITTEE MEMBER MARKET VALUE COMPENSATION FOR PERFORMANCE YEAR 2013[1]

		Base compensation	Variable compensation				Benefits		Total		Total compensation
			Short-term incentive plans		Long-term incentive plans						
	Currency	Cash (Amount)	Cash (Amount)	Shares (Market value)[2]	Equity Plan "Select" Shares (Market value)[3]	Long-Term Performance Plan Shares (Market value)[4]	Pension benefits (Amount)[5]	Other benefits (Amount)[6]	(Amount)[7]	Future LSSP/ESOP match[8] Shares (Market value)	Including future LSSP/ESOP match[9,10] (Amount)
Joseph Jimenez (Chief Executive Officer)	CHF	2,055,417	1,061,200	0	3,714,124	6,125,823	176,071	93,652	13,226,287	0	13,226,287
Juergen Brokatzky-Geiger	CHF	719,417	0	562,639	1,125,130	980,285	111,750	25,521	3,524,742	421,998[8]	3,946,740
Kevin Buehler	$	1,136,792	755,700	0	3,022,839	2,042,452	221,243	67,832	7,246,858	0	7,246,858
Felix R. Ehrat	CHF	841,667	0	718,325	1,436,503	1,155,441	169,575	0	4,321,511	718,325	5,039,836
David Epstein	$	1,400,000	579,600	579,668	2,898,018	2,830,397	375,079	30,013	8,692,775	579,668	9,272,443
Mark C. Fishman	$	990,000	866,300	0	3,465,002	1,765,989	244,152	208,836	7,540,279	0	7,540,279
Jeff George	CHF	816,667	387,450	387,483	1,549,856	975,344	126,872	62,607	4,306,279	193,741	4,500,020
George Gunn	CHF	865,000	545,000	0	908,305	1,469,616	119,676	44,682	3,952,279	0	3,952,279
Brian McNamara	$	633,231	14,527	567,873	1,164,830	552,038	80,203	30,430	3,043,132	567,873	3,611,005
Andrin Oswald	CHF	812,500	0	529,820	1,059,566	877,035	129,813	9,388	3,418,122	529,820	3,947,942
Jonathan Symonds (until April 30, 2013)[11]	CHF	310,833	194,792	0	0	1,400,291	56,529	2,985,401	4,947,846	0	4,947,846
Harry Kirsch (as from May 1, 2013)[12]	CHF	483,333	263,720	175,820	879,026	428,856	53,918	59,613	2,344,286	175,820	2,520,106
Total[13]	**CHF**	**10,760,277**	**4,506,033**	**3,437,610**	**20,450,720**	**20,077,080**	**1,797,473**	**3,593,293**	**64,622,486**	**3,103,227**	**67,725,713**

(1) Does not include reimbursement for travel and other necessary business expenses incurred in the performance of their services as these are not considered compensation.

(2) Participants elected to invest some or all of the value of their annual incentive in the Leveraged Share Savings Plan (LSSP) with a five-year vesting period or the Swiss Employee Share Ownership Plan (ESOP) with a three-year vesting period rather than to receive cash.

(3) Novartis shares granted under the Novartis Equity Plan "Select" have a three-year vesting period.

(4) Awarded based on the achievement of Novartis Economic Value Added (NVA) objectives over the three-year performance period ended December 31, 2013.

(5) Service costs of pension and post-retirement healthcare benefits accumulated in 2013.

(6) Includes perquisites and other compensation valued at market price. Does not include cost allowances and 2013 tax-equalization regarding the international assignment of David Epstein ($90,163), Jeff George (CHF 459,764) and Andrin Oswald (CHF 36,056). Does not include an annual pension in payment for Kevin Buehler as a result of a change of control clause ($499,524) relating to the acquisition of Alcon in 2011. Does not include dividend equivalents paid in 2013 to Kevin Buehler ($256,784) for pre Alcon merger RSUs grants, to David Epstein ($41,150) and Brian McNamara ($6,173) for RSUs grants made in or prior to 2010.

(7) The value of all equity grants included in this table has been calculated based on the closing price of January 22, 2014.

(8) Reflects shares to be awarded in the future under the share saving plans, either the five-year Leveraged Share Savings Plan (LSSP) or the three-year Swiss Employee Share Ownership Plan (ESOP). Participants will receive the full amount of additional shares ("matching shares") after the expiration of either the five- or three-year vesting period, assuming that they are still in service on the respective vesting date. Since Juergen Brokatzky-Geiger will reach the statutory retirement age before vesting of the LSSP, the matching award disclosed in the table reflects the value of the applicable prorated number of matching shares at his statutory age of retirement.

(9) The values of the shares and RSUs reflected in this table have been calculated based on market value at the date of grant. The closing share price on the grant date January 22, 2014 was CHF 73.75 per Novartis share and $80.79 per ADR.

(10) All amounts are gross amounts (i.e., before deduction of social security and income tax due by the executives). The employer social security contribution is not included.

(11) Jonathan Symonds stepped down from the Executive Committee as of April 30, 2013 and provides advisory work to Novartis since May 1, 2013. The information under the columns "Base compensation", "Short-term incentive plans" and "Pension benefits" in the table reflects his pro rata compensation over the period from January 1, 2013 to April 30, 2013 (i.e. the period during which he was member of the Executive Committee). The information under the column "Long-Term Performance Plan" in the table reflects his pro rata compensation for the performance period from January 1, 2011 to April 30, 2013 (i.e. the portion of the LTPP three-year performance period during which he was a member of the Executive Committee). The other compensation ("Other benefits") includes the contractual compensation and benefits from May 1, 2013 to December 31, 2013. Jonathan Symonds may receive further contractual compensation until January 2015 up to a maximum of CHF 2,969,293 in addition to relocation and financial planning reimbursements.

(12) The amounts reflect the compensation as Permanent Attendee to the Executive Committee from May 1, 2013 until December 31, 2013.

(13) Amounts in US dollar for Kevin Buehler, David Epstein, Mark C. Fishman and Brian McNamara were converted at a rate of CHF 1.00 = $1.079, which is the same average exchange rate used in the Group's consolidated financial statements.

EXECUTIVE COMMITTEE MEMBER—EQUITY AWARDS FOR PERFORMANCE YEAR 2013
(Number of equity instruments)

	Variable compensation			
	Short-term incentive plans	Long-term incentive plans		
		Equity Plan "Select"	Long-Term Performance Plan	Future LSSP/ESOP match
	Shares (Number)[1]	Shares (Number)[2]	Shares (Number)	Shares (Number)
Joseph Jimenez (Chief Executive Officer)	0	50,361	83,062	0
Juergen Brokatzky-Geiger	7,629	15,256	13,292	5,722
Kevin Buehler	0	37,416	25,281	0
Felix R. Ehrat	9,740	19,478	15,667	9,740
David Epstein	7,175	35,871	35,034	7,175
Mark C. Fishman	0	42,889	21,859	0
Jeff George	5,254	21,015	13,225	2,627
George Gunn	0	12,316	19,927	0
Brian McNamara	7,029	14,418	6,833	7,029
Andrin Oswald	7,184	14,367	11,892	7,184
Jonathan Symonds (until April 30, 2013)[3]	0	0	18,987	0
Harry Kirsch (as from May 1, 2013)[4]	2,384	11,919	5,815	2,384
Total	**46,395**	**275,306**	**270,874**	**41,861**

(1) These shares have a five-year vesting period under LSSP and a three-year vesting period under ESOP.

(2) These shares awarded under the Equity Plan "Select" have a three-year vesting period.

(3) The shares under the column "Long-Term Performance Plan" in the table reflects his pro rata compensation for the performance period from January 1, 2011 to April 30, 2013 (i.e. the portion of the LTPP three-year performance period during which he was member of the Executive Committee).

(4) The amounts reflect the compensation as Permanent Attendee to the Executive Committee from May 1, 2013 until December 31, 2013.

As the table below shows, the majority of Executive Committee compensation is variable and awarded under the long-term incentive plans. This ensures alignment with the interests of our shareholders.

EXECUTIVE COMMITTEE MEMBER ACTUAL COMPENSATION MIX IN 2013—BASE AND VARIABLE COMPENSATION[1]

		Variable (%)	
	Base salary	**Annual incentive**	**Long-term incentive[2]**
Joseph Jimenez (Chief Executive Officer)	15.9%	8.2%	75.9%
Juergen Brokatzky-Geiger	21.2%	16.6%	62.2%
Kevin Buehler	16.3%	10.9%	72.8%
Felix R. Ehrat	20.3%	17.3%	62.4%
David Epstein	16.9%	14.0%	69.1%
Mark C. Fishman	14.0%	12.2%	73.8%
Jeff George	19.8%	18.8%	61.3%
George Gunn	22.8%	14.4%	62.8%
Brian McNamara	21.6%	19.9%	58.5%
Andrin Oswald	24.8%	16.2%	59.1%
Harry Kirsch (as from May 1, 2013)[3]	21.7%	19.7%	58.6%
Total[4]	**18.2%**	**13.5%**	**68.3%**

(1) Excludes pension, other benefits and future LSSP/ESOP match.

(2) Long-term incentive includes Equity Plan "Select" and LTPP grants.

(3) Permanent Attendee to the Executive Committee.

(4) Excludes Jonathan Symonds who stepped down from the Executive Committee as per April 30, 2013.

Shares and Share Options owned by members of the Executive Committee

The following tables show the total number of vested and unvested Novartis shares or ADRs, as well as RSUs (but excluding unvested matching RSUs from LSSP/ESOP and unvested RSUs from LTPP) and the total number of share options owned by members of the Executive Committee and "persons closely linked to them" (see definition in section "Compensation governance") as of December 31, 2013.

As of December 31, 2013, no member of the Executive Committee together with "persons closely linked" to them owned 1% or more of the outstanding shares of Novartis, either directly or through share options.

As of December 31, 2013, all members of the Executive Committee who have served at least three years on the Executive Committee have met or exceeded their personal Novartis share ownership requirements.

SHARES OWNED BY EXECUTIVE COMMITTEE MEMBERS

	Number of shares[1]
Joseph Jimenez	465,007
Juergen Brokatzky-Geiger	268,498
Kevin Buehler	316,038
Felix R. Ehrat	52,616
David Epstein	259,854
Mark C. Fishman	347,359
Jeff George	127,666
George Gunn	157,468
Brian McNamara	39,242
Andrin Oswald	150,810
Harry Kirsch (as from May 1, 2013)[2]	68,102
Total[3]	**2,252,660**

(1) Includes holdings of "persons closely linked" to members of the Executive Committee (see definition under—Compensation Governance—Share Ownership Requirements).

(2) Permanent attendee to the Executive Committee.

(3) Excludes the holdings of Jonathan Symonds who stepped down from the Executive Committee as per April 30, 2013, consisting of 171,503 shares as per April 30, 2013.

SHARE OPTIONS OWNED BY EXECUTIVE COMMITTEE MEMBERS[1]

	Number of share options[2]						
	2013	2012	2011	2010	2009	Other	Total
Joseph Jimenez					552,076	157,266	709,342
Juergen Brokatzky-Geiger						211,766	211,766
Kevin Buehler						605,877[3]	605,877
Felix R. Ehrat							
David Epstein							
Mark C. Fishman						327,594	327,594
Jeff George			141,396	97,827	15,359	1,793	256,375
George Gunn						94,371	94,371
Brian McNamara						78,973	78,973
Andrin Oswald							
Harry Kirsch (as from May 1, 2013)[4]						44,569	44,569
Total[5]	**0**	**0**	**141,396**	**97,827**	**567,435**	**1,522,209**	**2,328,867**

(1) As of 2014, the share option grants have been discontinued under the Novartis Equity Plan "Select".

(2) Share options disclosed for a specific year were granted in that year under the Novartis Equity Plan "Select." The column "Other" refers to share options granted in 2008 or earlier, to share options granted to these executives while they were not Executive Committee members (nor Permanent Attendees), and to share options bought on the market by the Executive Committee members or "persons closely linked" to them (see definition under—Compensation Governance—Share Ownership Requirements).

(3) Consists of share settled appreciation rights resulting from conversion of Alcon equity into Novartis equity.

(4) Permanent Attendee to the Executive Committee.

(5) Excludes the holdings of Jonathan Symonds who stepped down from the Executive Committee as per April 30, 2013, consisting of 54,348 share options as per April 30, 2013.

Loans to members of the Executive Committee

No loans were granted to current or former members of the Executive Committee in 2013. No such loans were outstanding as of December 31, 2013.

Other payments to members of the Executive Committee

During 2013, no payments (or waivers of claims) other than those set out in the Executive Committee Member Compensation tables (including their footnotes) were made to current members of the Executive Committee or to "persons closely linked" to them.

Payments to former members of the Executive Committee

During 2013, no payments (or waivers of claims) were made to former members of the Executive Committee or to "persons closely linked" to them, except for an amount of CHF 1,146,000, which includes CHF 1,125,000 paid to a former member of the Executive Committee in relation to his obligation to refrain from activities that compete with any business of Novartis and an amount of $429,560 paid to a former member of the Executive Committee for the period January 1 to February 28,2013 in relation to the end of her notice period and in relation to her obligation to refrain from activities that compete with any business of Novartis.

BOARD COMPENSATION 2013

Members of boards of directors of global companies today face increasing responsibilities and must deal with issues that require ever higher levels of expertise and engagement. As a global healthcare company, Novartis shareholders have elected members of the Board of Directors who bring the skills required to meet these challenges. We set the compensation for the members of the Board of Directors at a level that allows for the attraction and retention of high-caliber individuals with global experience. The members of its Board of Directors do not receive variable compensation, underscoring their focus on long-term corporate strategy, supervision and governance.

Compensation Structure

	Board compensation
Fixed compensation	Yes
Variable compensation	No

The Board of Directors determines the compensation of its members, other than the Chairman, each year, based on a proposal by the Compensation Committee and advice from its independent advisor.

COMPENSATION OF THE CHAIRMAN OF THE BOARD

Daniel Vasella, M.D.

After 17 years of service as our Chairman, including 14 years as CEO and Chairman, 2013 saw the retirement of Dr. Daniel Vasella from the Board of Directors. The Board of Directors wishes to thank Dr. Vasella for his leadership in creating Novartis; for his dedication to the Company; for transforming the business portfolio to focus on healthcare, building a world-leading research organization and a strong leadership team; and for forging a reputation that is among the best in the industry and beyond.

Since the 2013 AGM, when he stepped down, Dr. Vasella has provided certain transitional services, including select Board mandates with subsidiaries of the Company, to support the ad-interim Chairman and the new Chairman. For his services during this transition period, from the AGM on February 22, 2013

to October 31, 2013, Dr. Vasella received cash compensation of CHF 2.7 million, and 31,724 unrestricted shares on October 31, 2013 (market value of the shares at the time of delivery was CHF 2.2 million). During the same period, the Company reimbursed the cost of Dr. Vasella's professional legal and financial advice amounting to CHF 161,983, and the cost of terminating his life insurance, amounting to CHF 60,166. For this period, a total amount of CHF 5.1 million was paid to him.

Dr. Vasella has subsequently been available to the Company, at the CEO's request and discretion, to provide coaching to high-potential Novartis associates and for speeches at key Novartis events. This agreement became effective on November 1, 2013 and will last until the end of 2016. Dr. Vasella will be compensated at a rate of $25,000 per day, with an annual guaranteed minimum fee of $250,000 for each of the calendar years 2014, 2015 and 2016. During November and December 2013, Dr. Vasella did not provide any coaching to associates and did not receive any compensation for this period.

Dr. Vasella will hold the title of Honorary Chairman in recognition of his significant achievements on behalf of the Company. There are no rights associated with this role in addition to his fiduciary duty as Honorary Chairman, and Dr. Vasella will not attend Board meetings or receive Board documents. No compensation will be provided in relation to this role other than administrative support and security which are usual and customary for a position of this nature.

Joerg Reinhardt, Ph.D.

At the 2013, AGM shareholders elected Dr. Joerg Reinhardt to the Board of Directors as our Chairman, effective August 1, 2013.

As our Chairman, Dr. Reinhardt will receive 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

Unless the Chairman decides to waive it, his total compensation shall increase for each period from Annual General Meeting to the succeeding Annual General Meeting at a rate at least equal to the average rate of the base salary increase granted to the Swiss executive associates of Novartis. Dr. Reinhardt is eligible for pension and insurance benefits according to the standard Novartis benefit plans. There is no variable or other component to his regular compensation.

Dr. Reinhardt will also receive compensation for lost entitlements at his former employer, with a total value of EUR 2.6 million. Payments will be staggered based on the vesting period at his former employer, and extend over the period from 2014-2016, provided that he remains in office as our Chairman at the respective due dates. On January 31, 2014, 2015 and 2016 he will respectively receive EUR 748,000 EUR 871,251 and EUR 1,045,800.

Ulrich Lehner, Ph.D.

During the transition period between the departure of Dr. Vasella and the arrival of Dr. Reinhardt, Vice Chairman Dr. Ulrich Lehner led the Board of Directors as Chairman on an ad-interim basis.

Dr. Lehner received an amount of CHF 791,668, which was a pro rata of CHF 1.9 million total annual compensation, for his tenure as Chairman ad-interim between the AGM on February 22, 2013 and July 31, 2013. This amount was paid equally in cash and shares. There was no variable or other component to Dr. Lehner's compensation. During his service as Chairman ad-interim, he did not receive regular Board fees and was not eligible to receive pension or any other insurance benefits.

Following completion of his tenure as Chairman ad-interim, the compensation of Dr. Lehner reverted to the ordinary compensation for a member of the Board of Directors.

Other members of the Board of Directors

For 2013, other members of the Board of Directors received, in one installment, an annual fixed Board membership fee and additional fees for committee chairmanships, committee memberships, and other functions to compensate for their increased responsibilities and engagements. Members of the Board of Directors do not receive additional fees for attending meetings. The annual fees cover the period from the AGM of the year of disclosure to the next AGM. Members of the Board of Directors are required to receive at least 50% of their total fees in the form of unrestricted Novartis shares. Members of the Board of Directors do not receive share options and do not have pension benefits.

The annual fee rates for Board membership and additional functions, to be paid in cash and shares, are as follows:

BOARD MEMBER ANNUAL FEE RATES (EXCL. CHAIRMAN)

	Annual fee (CHF)
Board membership	350,000
Chairman's Committee membership	150,000
Audit and Compliance Committee membership	100,000
Other Board Committee membership	50,000
Vice chairmanship of the Board of Directors	50,000
Board Committee chairmanship (except for ACC)	60,000
Audit and Compliance Committee chairmanship	120,000
Delegated board membership[1]	125,000

(1) The Board of Directors has delegated Rolf M. Zinkernagel to the Scientific Advisory Board of the Novartis Institute for Tropical Diseases (NITD). The Board of Directors has delegated both Rolf M. Zinkernagel and William Brody to the Board of Directors of the Genomics Institute of the Novartis Research Foundation (GNF).

Benchmarking the compensation of the members of the Board of Directors

The level of compensation for the members of the Board of Directors is set based on benchmarks that include the remuneration of members of boards of directors of comparable global healthcare companies (listed in section "Executive compensation philosophy and principles, Executive compensation benchmarking") and other large Swiss companies.

Board Member Compensation Table

Compensation of members of the Board of Directors for 2013

The following table discloses the compensation received by the members of the Board of Directors in 2013.

BOARD MEMBER COMPENSATION IN 2013[1]

	Board membership	Vice Chairman	Chairman's Committee	Audit and Compliance Committee	Risk Committee	Compensation Committee	Corporate Governance and Nomination Committee	Delegated board membership	Annual cash compensation (CHF) (A)	Shares (Market value) (CHF) (B)[2]	Shares (Number)	Other (CHF) (C)	Total (CHF) (A)+(B)+(C)
Daniel Vasella (until Feb 22, 2013)[3]	Chair		Chair	●[4]	●[4]	●[4]	●[4]		707,283	697,148	11,299	1,573,334[5]	2,977,765
Joerg Reinhardt (as of Aug 1, 2013)[6]	Chair		Chair						791,667	950,023	14,064	159,124[7]	1,900,814
Ulrich Lehner	Chair a.i.[8]	●	●	●	●	●	●		629,168[8]	629,217[8]	10,198	69,825[9]	1,328,210
Enrico Vanni	●	●	●	●		Chair			355,000	355,022	5,754	41,010[9]	751,032
Dimitri Azar	●			●					225,000	225,020	3,647	—	450,020
Verena A. Briner	●								175,000	175,043	2,837	18,782[9]	368,825
William Brody[10]	●					●		●	262,500	262,534	4,255	—	525,034
Srikant Datar	●		●	Chair	●	●			360,000	360,020	5,835	—	720,020
Ann Fudge	●				●	●	●		250,000	250,008	4,052	—	500,008
Pierre Landolt[11]	●						Chair		—	410,058	6,646	21,349[9]	431,407
Charles L. Sawyers	●								175,000	175,043	2,837	—	350,043
Andreas von Planta	●			●	Chair		●		280,000	280,056	4,539	29,023[9]	589,079
Wendelin Wiedeking	●				●		●		—	450,040	7,294	26,893[9]	476,933
William T. Winters	●								175,000	175,043	2,837	—	350,043
Rolf M. Zinkernagel[12]	●						●	●	325,000	325,036	5,268	34,382[9]	684,418
Total									**4,710,618**	**5,719,311**	**91,362**	**1,973,722**	**12,403,651**

(1) Does not include reimbursement for travel and other necessary business expenses incurred in the performance of their services as these are not compensation.

(2) The value of the shares reflected in this column has been calculated based on market value of the shares at grant date. All shares, except those granted to Joerg Reinhardt, were granted as per January 17, 2013 against the prevailing share price of CHF 61.70. Joerg Reinhardt's compensation in the form of shares was granted as per August 2, 2013 against the prevailing share price of CHF 67.55.

(3) Daniel Vasella's compensation set out in this table reflects the Chairman period from Jan 1, 2013 to Feb 22, 2013 and does not include further payments related to the post Chairman period, which are disclosed in section "Board compensation 2013".

(4) During his Chairmanship (i.e. until February 22, 2013), Daniel Vasella attended the meetings of these Committees as a guest without voting rights.

(5) Includes inter alia social security costs due by the individual and paid by the Company, pension costs for the Chairman period as well as a one-off pension contribution.

(6) Dr. Reinhardt will also receive compensation for lost entitlements at his former employer, with a total value of EUR 2.6 million. Payments will be staggered based on the vesting period at his former employer, and extend over the period from 2014-2016, provided that he remains in office as our Chairman at the respective due dates. On January 31, 2014, 2015 and 2016 he will respectively receive EUR 748,000, EUR 871,251 and EUR 1,045,800.

(7) Includes social security costs due by the individual and paid by the Company and pension costs.

(8) Ulrich Lehner was Chairman of the Board on an ad interim basis for the period from February 22, 2013 until July 31, 2013. For this role and time interval, he received a cash compensation of CHF 395 834 and an equal payment in form of shares granted as per January 17, 2013 against the prevailing share price of CHF 61.70 (6 416 shares) and delivered on August 2, 2013.

(9) Includes social security costs due by the individual and paid by the Company.

(10) The Board of Directors has delegated William Brody to the Board of Directors of the Genomics Institute of the Novartis Research Foundation (GNF).

(11) According to Pierre Landolt, the Sandoz Family Foundation is the economic beneficiary of the compensation.

(12) 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).

Shares and share options owned by members of the Board of Directors

Members of the Board of Directors are required to own at least 5000 Novartis shares within three years after joining the Board of Directors, to ensure alignment of their interests with our shareholders. As of December 31, 2013, 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.

The total number of vested and unvested Novartis shares, ADRs and share options owned by members of the Board of Directors and "persons closely linked" to them (see definition in section "compensation governance") as of December 31, 2013, is shown in the table below. We last granted share options to non-executive members of the Board of Directors in 2002.

As of December 31, 2013, no member of the Board of Directors together with "persons closely linked" to them owned 1% or more of the outstanding shares (or ADRs) of Novartis, either directly or through share options. As of the same date, no member of the Board of Directors held any share options.

SHARES OWNED BY BOARD MEMBERS[1,2]

	Number of shares[3]
Joerg Reinhardt	558,511
Ulrich Lehner	35,351
Enrico Vanni	12,684
Dimitri Azar	5,642
Verena A. Briner	3,837
William Brody	17,356
Srikant Datar	29,622
Ann Fudge	13,161
Pierre Landolt[4]	50,644
Charles L. Sawyers	2,128
Andreas von Planta	121,334
Wendelin Wiedeking	278,139
William T. Winters	2,128
Rolf M. Zinkernagel	40,000
Total[5,6]	**1,170,537**

(1) Includes holdings of "persons closely linked" to Board members (see definition under—Compensation Governance—Share Ownership Requirements).

(2) 2002 was the last year during which Novartis granted share options to non-executive Board members. All these options have expired in 2011.

(3) Each share provides entitlement to one vote.

(4) According to Pierre Landolt, the Sandoz Family Foundation is the economic beneficiary of all shares.

(5) Excludes the holdings of Daniel Vasella who did not stand, at his own wishes, for re-election to the Board of Directors at the AGM 2013, consisting of 3 409 035 shares and of 1 633 290 share options as per February 22, 2013. The options were granted to him during his tenure as CEO and Chairman.

(6) Excludes the holdings of Marjorie M.T. Yang who did not stand, at her own wishes, for re-election to the Board of Directors at the AGM 2013, consisting of 18 000 shares as per February 22, 2013.

Loans to members of the Board of Directors

No loans were granted to current or former members of the Board of Directors during 2013. No such loans were outstanding as of December 31, 2013.

Other payments to members of the Board of Directors

During 2013, no payments (or waivers of claims) other than those set out in the Board Member Compensation table (including its footnotes) and the accompanying text in section "Board compensation 2013" were made to current members of the Board of Directors or to "persons closely linked" to them.

Payments to former members of the Board of Directors

During 2013, no payments (or waivers of claims) were made to former Board members or to "persons closely linked" to them, except for an amount of CHF 62,346 that was paid to Dr. Alex Krauer, Honorary Chairman.

Note 27 to the Group's audited consolidated financial statements

The total expense for the year for the compensation awarded to the members of the Board of Directors and the members of the Executive Committee using IFRS measurement rules is presented in our Financial Report in Note 27 to the Group's audited consolidated financial statements.

COMPENSATION GOVERNANCE

Legal Framework

The Swiss Code of Obligations as well as the Corporate Governance Guidelines of the SIX Swiss Exchange require listed companies to disclose certain information about the compensation of members of the Board of Directors and members of the Executive Committee, their equity participation in the Group as well as loans made to them. This Annual Report fulfills that requirement. In addition, our Annual Report is in line with the principles of the Swiss Code of Best Practice for Corporate Governance of the Swiss Business Federation (economiesuisse).

Decision-making authorities

Authority for decisions related to compensation are governed by the Articles of Incorporation, the Board Regulations and the Compensation Committee Charter, which are published on our website: www.novartis.com/corporate-governance. The main responsibilities of the Compensation Committee are shown under "Corporate Governance Report—Our Board of Directors—Role of the Board of Directors and the Board Committees."

The Compensation Committee serves as the supervisory and governing body for compensation policies and plans within Novartis and has overall responsibility for determining, reviewing and proposing compensation policies and plans for approval by the Board of Directors in line with the Compensation Committee Charter. The main discussion points and conclusions of each meeting of the Compensation Committee are summarized in a brief report to the next meeting of the full Board.

The Compensation Committee carefully analyzes and discusses on an ongoing basis (but at least annually) the trends and developments in the field of compensation (including changes in corporate governance rules and best practices relevant to it), as well as compensation plans and pay levels, with guidance from outside experts and its independent advisor. The goal is to strengthen the relationship between the compensation plans and the Group's performance. It also reviews the compensation system to ensure that it does not encourage inappropriate or excessive risk taking and instead encourages behaviors that support sustainable value creation.

The Compensation Committee is composed exclusively of members of the Board of Directors who meet the independence criteria set forth in our Board Regulations. The Compensation Committee has the following five members: Anne Fudge, Enrico Vanni, William Brody, Srikant Datar and Ulrich Lehner. Enrico Vanni has served as Chair since 2012.

The Compensation Committee held six formal meetings and two additional joint telephone conferences with the Corporate Governance and Nomination Committee (to review the impact of the changes in Swiss remuneration rules) in 2013. The Committee conducted a self-performance evaluation in 2013, as it does every year.

A summary of the compensation decision-making authorities is set out below:

COMPENSATION AUTHORIZATION LEVELS

Decision on	Recommendation	Authority
Compensation of Board members	Compensation Committee	Board of Directors
Compensation of the Chief Executive Officer	Chairman of the Board	Compensation Committee
Compensation of the Executive Committee members	Chief Executive Officer	Compensation Committee
Special Share Awards[1]	Chairman of the Board or Chief Executive Officer	Compensation Committee

(1) Executive Committee members are not eligible.

Role of the Compensation Committee's independent advisor

The Compensation Committee retained Frederic W. Cook & Co., Inc., as its independent external compensation advisor for 2013. The advisor was hired directly by the Compensation Committee in 2011, and the Committee has been fully satisfied with the performance of the advisor since its engagement. The Committee Advisor is independent of management and does not perform any other consulting work for Novartis. The key task of the independent advisor is to assist the Compensation Committee in ensuring that our compensation policies and plans are competitive, correspond to market practice, and are in line with our compensation principles.

The Compensation Committee enters into a consulting agreement with its independent advisor on an annual basis. In determining whether or not to renew the engagement with the advisor, the Compensation Committee evaluates the quality of the consulting service and the benefits of rotating advisors. In addition, the Compensation Committee assesses on an annual basis the projected scope of work for the coming year.

The Compensation Committee determined that Frederic W. Cook & Co., Inc. is free of any relationship that would impair professional and objective judgment and advice to the Compensation Committee, and has never been hired for work by the management of Novartis.

Clawback

Any incentive compensation paid to senior executives, including members of the Executive Committee, is subject to "clawback." This means that we may choose not to pay future incentive

compensation or seek to recover incentive compensation where the payout has been proven to conflict with internal management standards (including Company policies and Novartis Values and Behaviors), accounting policies or a violation of law.

Share ownership requirements

In line with our equity ownership principle, key executives are required to own at least a certain 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. In the event of a substantial drop in the share price, the Board of Directors may, at its discretion, extend that time period.

Chief Executive Officer	5 × base compensation
Members of the Executive Committee	3 × base compensation
Selected Key Associates	1 × or 2 × base compensation

The determination of equity amounts against the share ownership requirements includes vested and unvested shares or ADRs, as well as RSUs, acquired under our compensation plans, but excluding unvested matching RSUs from LSSP/ESOP and unvested RSUs from LTPP. The determination includes other shares as well as vested options on Novartis shares or ADRs that are owned directly or indirectly by "persons closely linked"[7] to them.

The Compensation Committee reviews compliance with the share ownership guideline on an annual basis.

Risk management

We believe that our compensation system encourages performance, loyalty and entrepreneurship, and creates sustainable value that is in the interest of Novartis and our shareholders. However, shareholders also expect that risks are appropriately managed. At Novartis, appropriate target setting combined with proper incentive-plan design and rigorous safeguard measures allow our leaders and associates to focus on long-term value creation.

Our compensation system is intended to encourage high performance and entrepreneurship, but not to reward inappropriate or excessive risk taking or short-term profit maximization at the expense of the long-term health of Novartis.

The following characteristics of our compensation system foster a culture of entrepreneurial risk management:

- Balanced Scorecard Approach to Performance-based Incentives: The annual and long-term incentive compensation plans are not overly focused on any single measure of performance. Instead, a balanced set of financial and non-financial objectives are applied. Financial objectives include net sales, operating income, free cash flow as a percentage of sales, and Novartis Economic Value Added (NVA). Non-financial objectives emphasize the achievement of strategic and leadership objectives, and managing people, but also market presence, innovation and process and productivity improvement. Under the incentive plans, performance multipliers may not exceed 200% of target;
- Novartis Values and Behaviors: Compliance and ethical conduct are integral factors considered in the overall performance review, setting clear behavioral boundaries;
- People Performance Management Process: A rigorous performance management system is in place based on agreed-upon objectives, values and behaviors reflecting compliance and meritocracy;

[7] "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.

– Balanced Mix of Compensation Elements and Performance Measures: The target compensation mix is not overly weighted toward Annual Incentive awards but represents a combination of cash and long-term share-based compensation vesting over three years;

– Performance Period and Vesting Schedules: For long-term incentives, performance period and vesting schedules overlap, reducing the motivation to maximize performance in any one period. The equity awarded under the Equity Plan "Select" vests after a period of three years. LTPP is an equity plan based on a three-year performance period;

– Clawback: We implemented "clawback" provisions in individual employment contracts of all members of the Executive Committee, as well as in most incentive plans and corresponding documentation;

– No Severance Payments or Change-of-Control Clauses: Employment contracts for members of the Executive Committee provide for a notice period of 12 months and contain no change-of-control clauses or severance provisions (i.e. agreements concerning special notice periods, longer-term contracts, "golden parachutes", waiver of lock-up periods for equities and bonds, shorter vesting periods and additional contributions to occupational pension schemes); and

– Share Ownership Requirements: Members of the Executive Committee, as well as selected key executives are required to own a certain multiple of their annual base compensation in Novartis shares or share options.

EXECUTIVE COMPENSATION 2014

Objectives of the 2014 compensation system

At the 2013 AGM, shareholders approved, with a significant majority, key changes to our executive compensation system.

Changes will be effective for the CEO and members of the Executive Committee for performance periods beginning in January 2014.

Our new executive compensation system is intended to even better align with the interests of our shareholders, foster long-term value creation and to reward sustained superior performance.

The following aims were considered by the Compensation Committee in the design of the new compensation system:

– Further simplify our program, facilitating communication internally and externally;

– Better differentiate between the performance measures to be used for the short-term and long-term incentive plans;

– Grant only performance-vesting awards under the long-term incentive plans; and

– Create two long-term incentives, one that focuses on internal measures, including financial and innovation targets, and one that focuses on external measures to further align with the interests of our shareholders.

Key features of the 2014 compensation system

The key features of the new compensation system can be summarized as follows:

– All variable compensation is performance-based, with separate performance measures used for the short-term and long-term incentive plans;

– The Annual Incentive plan (around one third of the overall incentive opportunity for the CEO and Executive Committee members) is based on an individual balanced scorecard of 1-year financial

and non-financial performance measures, together with assessed values and behaviors. This incentive is paid annually half in cash and half in shares (the latter deferred and subject to forfeiture for three years);

– The two long-term incentive plans (totaling around two thirds of the overall incentive opportunity for the CEO and Executive Committee members) are based on different performance measures, and are paid in shares after a three-year performance period;

– The Long-Term Performance Plan (LTPP) includes a three-year forward-looking financial measure at Group level (Novartis Cash Value Added, NCVA), and an innovation measure at divisional level;

– The Long-Term Relative Performance Plan (LTRPP) rewards for performance of the Group's Total Shareholder Return (TSR) measured over a three-year period relative to a peer group of comparator companies; and

– The new compensation system no longer contains discretionary or matching share awards for Executive Committee members or share options.

Pension and insurance benefits are provided in addition to the above based on applicable local market practices and regulations.

In 2013, the Compensation Committee undertook a detailed benchmarking analysis with the support of its independent advisor, Frederic W. Cook & Co., Inc., and based on data provided by Towers Watson, to rebalance the compensation of the Executive Committee members between the new Annual Incentive and long-term incentive plans, ensuring that we are in line with market practice.

In addition, the Compensation Committee reviewed the performance measures for the variable compensation plans to ensure full alignment with our stated strategy focusing on innovation, growth and productivity.

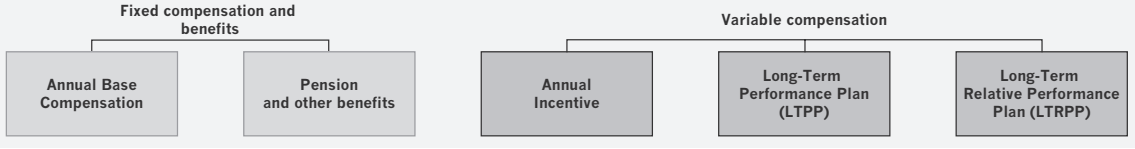
For the LTPP, the Compensation Committee decided that all Executive Committee members should be measured on Group, rather than divisional, NCVA targets to drive cross-divisional collaboration for the benefit of the Group. For the LTRPP, which focuses on relative Total Shareholder Return, the Compensation Committee determined the payout scale after incorporating feedback from our shareholders.

The new compensation system is simpler, and will allow shareholders to better evaluate the link between pay and performance for the CEO and Executive Committee members.

Compensation for the CEO and Executive Committee members going forward will be awarded under the new compensation system. Awards granted under the previous compensation system will continue according to the vesting schedules and rules that were applicable at the time.

Executive compensation system 2014 for the CEO and Executive Committee members

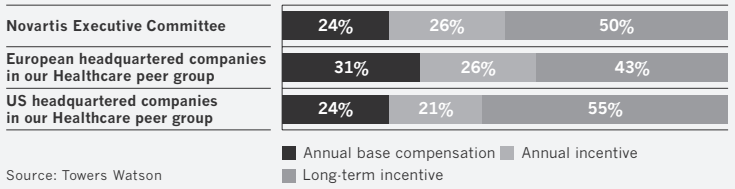
Our 2014 compensation system for the CEO and Executive Committee members is based on the following components:



Under our 2014 compensation system, our variable compensation is split between the Annual Incentive and the two long-term incentives for the CEO and Executive Committee in the ratio of one to

two. This is in line with our strategy and the long-term innovation-driven business cycle which characterizes our industry. For our 2014 system we apply the same benchmarking philosophy as described in section "Executive compensation philosophy and principles". Members of the Executive Committee achieving their objectives are generally awarded target compensation at a level comparable to the median level of the relevant benchmarks. In the event of under- or over-performance, the actual compensation may be lower or higher than the benchmark median. The graph below illustrates the average target pay mix of the 2014 Novartis Executive Committee, excluding the CEO, compared to the average target pay mixes of our European and US peer groups using 2013 data.

NOVARTIS EXECUTIVE COMMITTEE PAY MIX COMPARED TO US AND EUROPEAN PEERS (EXCLUDING THE CEO)



Source: Towers Watson

Annual Incentive

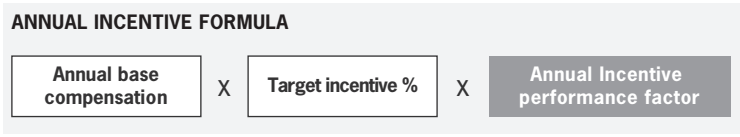
Overview

The new Annual Incentive for the CEO and Executive Committee members continues to ensure that, over a single financial year, executives focus on key business financial and innovation performance measures, as well as the Novartis Values and Behaviors.

We define a target incentive as a percentage of base compensation at the beginning of each performance period—traditionally the start of each calendar year. The target incentive is 150% of base compensation for the CEO, and up to 120% for Executive Committee members, to be paid half in cash and half in shares deferred for three years. For members of the Executive Committee, the Annual Incentive represents between 30% and 38% of their 2014 total target variable compensation.

Performance measures

The new Annual Incentive is based on an individual balanced scorecard of 1-year financial and non-financial performance targets, together with assessed values and behaviors. Business and Individual Performance Factors are no longer applied to determine payouts. The formula for the new Annual Incentive is outlined below:



An illustrative balanced scorecard for the CEO is set out below:

Illustrative 2014 Balanced Scorecard for the CEO

Performance measures	Weight	Breakdown of performance measures
Group Financial and Innovation Targets . .	60%	Group sales Group net income Group free cash flow as % of sales Corporate net result see section "Executive compensation 2013, Annual incentive" Weighted average of division innovation **Total**
CEO Individual Objectives	40%	Additional key financial targets e.g. EPS Market share and growth targets Organizational health goals Customer satisfaction targets
Overall total	**100%**	

Group Financial and Innovation targets and Individual objectives are weighted 60% and 40% respectively. Within the Group Financial and Innovation targets, each measure such as sales or net income is weighted individually.

Following a thorough review of performance against balanced scorecard objectives, as well as an assessment of values and behaviors, a rating will be assigned 1-3 for each. The following payout matrix shows how the Annual Incentive performance factor will then be derived. The Compensation Committee will use its discretion to determine the final payout factor taking into account the ranges shown. Payouts are capped at 200% of target.

Annual incentive payout matrix

Performance vs. Balanced scorecard		% Payout		
Exceeded Expectations	3	70%–100%	130%–160%	170%–200%
Fully met expectations	2	50%–80%	90%–120%	130%–160%
Partially met expectations	1	0%	0%–70%	60%–90%
		1	2	3
		Partially met expectations	Fully met expectations	Exceeded expectations
		Values and Behaviors Assessment		

Form of the award

The Annual Incentive is paid 50% in cash in March of the year following the performance period, and 50% in Novartis shares that are deferred and restricted for three years (or RSUs if restricted shares are not possible). 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 or voting rights.

If a participant leaves Novartis for reasons other than retirement, disability or death, unvested shares (and RSUs) are forfeited, unless determined otherwise by the Compensation Committee (for example in connection with a reorganization or divestment).

Executives may choose to receive some or all of the cash portion of their Annual Incentive in shares.

Delivery of equity at vesting

Following the vesting period, settlement is made in unrestricted Novartis shares or American Depositary Receipts (US only).

Long-Term Performance Plan (LTPP)

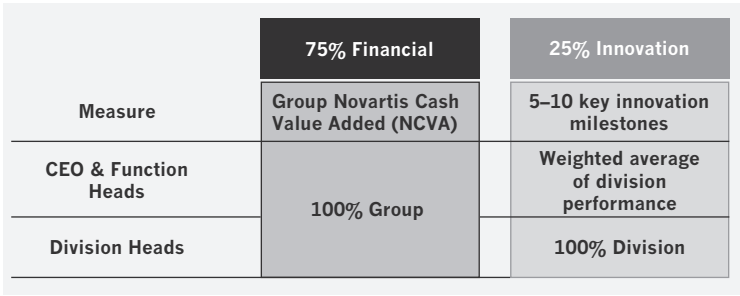
Overview

The new Long-Term Performance Plan (LTPP), designed to drive long-term shareholder value creation and long-term innovation, will be available only to the CEO and Executive Committee members in 2014. It is intended that additional executives in key positions, with a significant impact on the long-term success of Novartis, will be invited to participate in the new LTPP, which will replace the current LTPP in the future.

The target incentive is 200% of base compensation for the CEO. For members of the Executive Committee, LTPP represents between 44% and 55% of their total variable compensation at target.

Performance measures

The LTPP payout is based on the achievement of long-term shareholder value creation and innovation. The rewards are based on rolling three-year global performance objectives focused on financial and innovation measures. The split of performance measures is set out below:



Financial measure (Group Novartis Cash Value Added)

The Novartis Economic Value Added (NVA) metric that was used in our previous Long-Term Performance Plan has been revised and replaced by a metric that is based on what we assess to be our sustainable cash flow less a capital charge on gross operating assets. We call this metric Novartis Cash Value Added (NCVA), and this will be used for awards under our Long-Term Performance Plan starting with the 2014-2016 performance cycle. Although both metrics aim to evaluate long-term business performance and value creation, NCVA is better aligned with the way we drive business performance at all levels throughout the organization. Our sustainable cash flow is defined as our operating income after tax and reversing for amortization charges on intangible assets, gains and losses from non-operating financial assets which contribute to operating income and impairment charges. Our capital charge is defined as the notional interest using an interest rate, representing our internally calculated weighted average cost of capital for the Group. It is calculated on our gross operating asset base, represented by net working capital, property, plant and equipment, goodwill and other intangible assets.

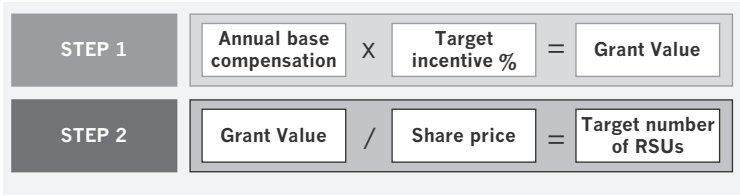
Three-year forward-looking targets are set at the beginning of the performance cycle by the Board of Directors. The performance ratio of a plan cycle is obtained right after the end of the third plan year by dividing the performance realization for the plan cycle by the performance target for the plan cycle and expressing the result as a percentage. The calculated performance realization is adjusted by major events during the cycle (e.g. divestments, acquisitions). The weighting of this measure is 75% within LTPP.

Innovation measure

Innovation is of key importance to the future of Novartis. A holistic approach is used by the Compensation Committee to determine the realization and performance factor of this portion of LTPP. Three-year forward looking divisional innovation targets are set at the beginning of the cycle, comprised of five to ten target milestones that represent the most important research and development project milestones for each division. These milestones might be chosen because of the future quantitative 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. At the end of the performance period, the Compensation Committee will consider the achievement on both a qualitative and quantitative basis, taking into account the difficulty of each milestone. The weighting of this measure is 25% within LTPP.

Form of the award at grant

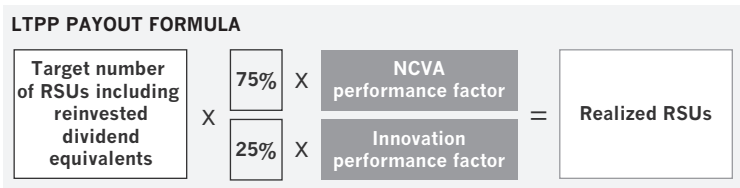
At the beginning of every performance period, plan participants are granted a target number of RSUs according to the following formula:



Delivery at Vesting

At the end of the three-year performance period, the Compensation Committee adjusts the number of RSUs earned based on actual performance against the financial and innovation targets.

The NCVA performance factor is based on a 1:5 payout curve, where a 1% deviation in realization versus target leads to a 5% change in payout (for example, a realization of 105% leads to a payout factor of 125%). If performance over the three-year vesting period falls below 80% of target, no payout is made for this portion of LTPP. If performance over the three-year vesting period is above 120% of target, payout for this portion of LTPP is capped at 200% of target. The innovation performance factor is determined directly by the Compensation Committee.



The performance factors are capped at 200% of the target RSUs including reinvested dividend equivalent RSUs. For the financial measure, this corresponds to an achievement of 20% above target. If a participant leaves Novartis for reasons other than retirement, disability or death, none of the award vests. Where a member is terminated by the Company for reasons other than for performance or conduct, the award vests on a pro rata basis for time spent with the Company during the performance period. In such a case, the award will vest on the regular vesting date (no acceleration), will be subject to performance testing 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 or disability, will receive full vesting of their award on the normal vesting date (no acceleration). The award will be subject to performance testing and it will also be subject to other conditions such as observing the conditions of a non-compete agreement. In the case of termination upon death, accelerated vesting will be applied.

At the end of the performance period, RSUs are converted into unrestricted Novartis shares and immediately vest. In the United States, awards may also be delivered in cash under the US deferred compensation plan. Each RSU is equivalent in value to one Novartis share and is converted into one share at the vesting date. RSUs do not carry voting rights, but do carry dividend equivalents that are reinvested in additional RSUs and paid at vesting to the extent that performance conditions have been met.

Long-Term Relative Performance Plan (LTRPP)

Overview

The new Long-Term Relative Performance Plan (LTRPP) is an equity plan for key executives, designed to drive competitive long-term shareholder return. The target incentive is 100% of base compensation for the CEO. For other members of the Executive Committee, LTRPP represents between 10% and 23% of their total variable compensation at target.

Performance measure

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 US dollar as share price growth plus dividends over the three-year performance period. The calculation will be based on Bloomberg standard published TSR data, which is publicly available.

The peer group for the 2014-2016 performance cycle is the same as for determining the compensation of Executive Committee members (see section "Executive compensation philosophy and principles, Executive compensation benchmarking").

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 set out below:

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%

TSR performance above median (above position 7 of 13) is required for awards to be earned at or above 100% of target. Thus, if Novartis' relative TSR is median or less, the maximum payout is 80% of target. No awards are granted for performance 11 of 13 or below. The Compensation Committee retains overall discretion to determine the payout within the ranges shown, and will take into consideration factors such as absolute TSR and overall economic conditions, as well as anomalous situations.

Form of the award at grant

At the beginning of every performance period, plan participants are granted a target number of RSUs, in the same way that applies for LTPP (see section "Executive compensation system 2014 for the CEO and Executive Committee members, Long-Term Performance Plan").

Delivery at Vesting

At the end of the performance period, RSUs are converted into unrestricted Novartis shares and immediately vest. In the United States, awards may also be delivered in cash under the US deferred compensation plan. The rules for participants leaving Novartis under this incentive plan are the same as those applied for the LTPP plan (see section "Executive compensation system 2014 for the CEO and Executive Committee members, Long-Term Performance Plan").

Each RSU is equivalent in value to one Novartis share and is converted into one share at the vesting date. RSUs do not carry voting rights, but do carry dividend equivalents that are reinvested in additional RSUs and paid at vesting to the extent that performance conditions have been met.

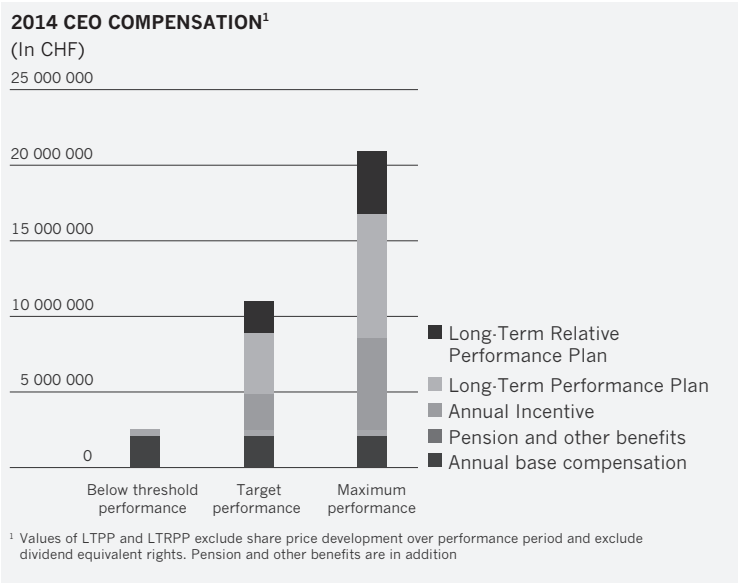
TRANSITION TO THE COMPENSATION SYSTEM 2014

From 2014, grants will be made to the CEO and ECN Members under the new compensation system as described herein. However, previous cycles of long-term incentives from the current compensation system will vest according to their normal cycles and plan rules.

Proposed CEO compensation mix 2014

At target, the CEO's compensation is made up of 18% annual base compensation, 2% benefits, 26% Annual Incentive and 54% long-term incentive. The long-term incentive is split according to a ratio of 2:1 LTPP to LTRPP. The emphasis on the long-term incentive reflects our strategy and the long-term innovation-focused business cycle which characterizes our industry.

The CEO compensation for 2014 at minimum, target and maximum performance is set out in the table below. All incentives may payout at 0–200% of target.



[1] Values of LTPP and LTRPP exclude share price development over performance period and exclude dividend equivalent rights. Pension and other benefits are in addition

BOARD COMPENSATION 2014

Compensation of the Chairman of the Board

For 2014, the Chairman voluntarily waived his contractual opportunity to receive the increase in compensation to which he is entitled, which is an amount not lower than the average annual compensation increase awarded to associates based in Switzerland (1.5% for 2014). Therefore, his total annual compensation will remain at CHF 3.8 million, to be paid 50% in cash, and 50% in shares. In addition to his annual compensation, he will receive an amount of EUR 871,251 on January 31, 2015, should he remain in his position until that date. This amount is the second of three installments comprising a total buy out of EUR 2,665,051, which compensates him for lost entitlements with his previous employer due to him joining Novartis. Finally, in 2014 the Company will make employer contributions regarding the Chairman's participation in the Novartis Swiss standard pension and life insurance benefit plans. These contributions are estimated not to exceed CHF 162,000.

Compensation of the other members of the Board of Directors

During 2013, the Compensation Committee, together with its independent advisor, also undertook a detailed review of Board compensation and has approved a revised policy, which is outlined in section "Board Compensation 2014" on this page. It reflects some of our recent governance changes, including the removal of the Chairman's Committee. It aims to better align our Board compensation to the current levels of our international healthcare peer group, and other Swiss industrial companies; the latter being relevant due to the extensive responsibilities that a Swiss board has, including but not limited to setting strategy, ensuring its implementation, making organizational decisions, carrying responsibility for financial performance and integrity, and overseeing senior management. The Board decided to:

- reduce the annual retainer for Board members from CHF 350,000 to CHF 300,000 per year;
- maintain the same level of fees for the Vice Chairman position;
- maintain the same level of fees for the Chairs of the Board Committees;
- reduce the fees of members of Board Committees (the Chairman's Committee has been disbanded as of 2014 and a new Research and Development Committee has been introduced) to half of the amount paid to the Chair of the Committee; and

The annual fee rates to apply from the 2014 AGM are set out below:

2014 BOARD MEMBER ANNUAL FEE RATES (EXCL. CHAIRMAN)

	Annual fee (CHF)
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 Responsibility Committee –Risk Committee –Research & Development Committee	60,000
Membership of Audit and Compliance Committee	60,000
Membership of the following Committees: –Compensation Committee –Governance, Nomination and Corporate Responsibility Committee –Risk Committee –Research & Development Committee	30,000

In addition, the Board decided to adopt the following policies regarding their compensation:

- 50% of compensation will be delivered in cash, paid on a quarterly basis in arrears;
- 50% of compensation will be delivered in shares in two installments; one six months after the AGM and one a full year after the AGM;

– Share ownership guidelines for the Chairman are increased to a minimum of 30,000 shares and, for the other members of the Board of Directors, a minimum of 4,000 shares to be obtained over a period of three years; and

– Board members will bear the full cost of their employee social security contributions, if any.

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.

Item 6.C Board Practices

Novartis strives to create sustainable value. Our corporate governance framework is designed to support this goal. While it complies with all applicable laws and implements the best corporate governance standards, it is tailor-made for Novartis.

DEAR SHAREHOLDER

Having joined the Board on August 1, 2013, this is the first time that I introduce our Corporate Governance Report to you. I decided to replace the "Introduction" chapter with a letter, conveying my views on some key corporate governance aspects. The letter is intended to share with you my understanding of good corporate governance, a strong Board and the role of Chairman as well as my perspective on shareholder engagement.

A Strong board Guarantees Good Corporate Governance

An effective Board must have the right composition, structure, processes and a clear understanding of its role. The Novartis Board meets these requirements:

Our Board is composed of members who are diverse in terms of education, experience, geographical origin and interpersonal skills. We put great emphasis on the training of our Board members, on performance evaluation and on the improvement of our individual Board members and the Board as a whole, and finally on succession planning. All our Board members are independent and we have appropriate processes in place that are crucial for the effective functioning of our Board. They ensure efficient and balanced decision making, and guarantee a seamless information transfer, allowing the Board to perform its supervisory duty and to make decisions that are reserved for the Board.

The key roles of the Board include setting the strategic direction of Novartis and appointing the members of the Executive Committee. We closely communicate with the Executive Committee, making sure our strategy is properly implemented and our ethical standards are applied. In our work with the Executive Committee we assert independent judgment and work toward fostering a strong relationship based on mutual respect and trust.

The Role of the Chairman

In my role as independent, non-executive Chairman I provide leadership to the Board and make sure that it has an excellent collaboration with our CEO and the Executive Committee.

Leading the Board I ensure that the Board and its committees work effectively. I set the agenda, style and tone of the Board discussions, promote constructive debate and effective decision-making, and make sure that the performance of our Board is regularly evaluated and that Board members are properly trained.

I support and mentor our CEO, while not interfering with the operational management of Novartis.

I also support effective communication with you, our shareholders, so that we understand your views.

Novartis is Adapting its Corporate Governance

The Novartis corporate governance regime consistently meets international best-practice standards as we continually strive to improve our leadership principles and practices through an intensive exchange with our shareholders and other stakeholders.

Our corporate governance regime supports Novartis in protecting the interests of our shareholders, by creating long term and sustainable shareholder value and to care and cure for another fundamental group of our stakeholders—patients. To achieve this, our governance is structured to address conflicts, align interests and allow for efficient and well-founded Board and management decisions.

As in all other aspects, we continuously strive to improve in the interests of all stakeholders. In 2013, we have undertaken an extensive review of our corporate governance regime, benchmarking it against international best practice, and have identified a number of improvement opportunities that we will implement in 2014: We are creating a new "Research & Development Committee" of the Board to oversee our research and development strategy and evaluate the effectiveness and competitiveness of our research and development organization. We are extending the scope of the mandate of the Corporate Governance and Nomination Committee to cover corporate responsibility matters. We are disbanding the Chairman's Committee, while empowering the Executive Committee and accelerating decision making. In 2014 we intend to introduce, inter alia, the following elements of the "Minder Initiative": the annual election by the General Meeting of all Board members, of the Chairman of the Board and of the Members of the Compensation Committee; the possibility for the shareholders to electronically provide their voting instructions to the independent proxy; and the ban of the corporate and custody proxies. We will also hold a non-binding say-on-pay vote at our AGM in 2014.

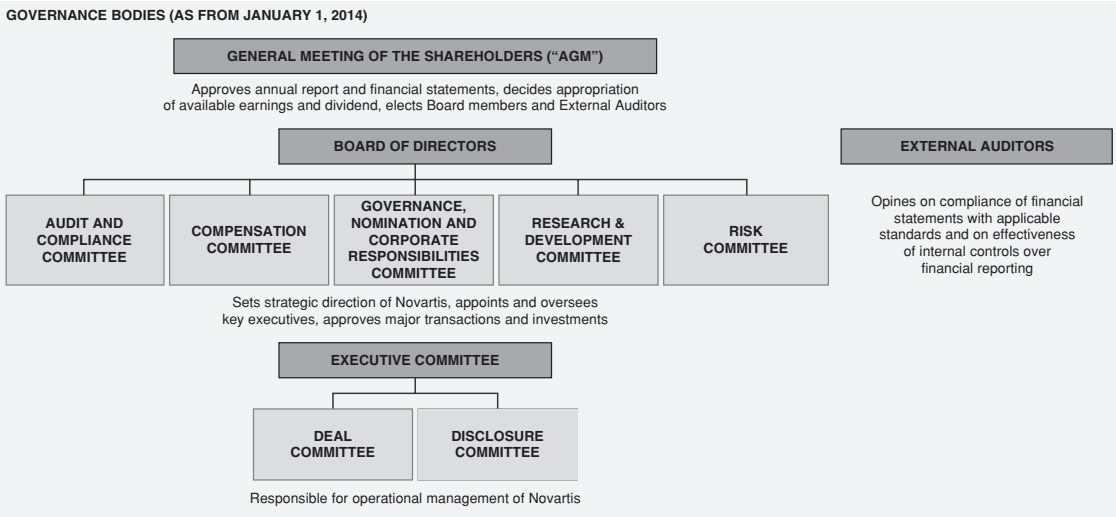
The Importance of Shareholder Engagement

I firmly believe that shareholder engagement is crucial for the long-term success of our Company. It should be conducted in an atmosphere of trust and respect that allows for a collaborative dialogue in which views and positions between Novartis and its shareholders are expressed openly to enhance mutual understanding. As part of these efforts we have established regular meetings of our governance specialists with their respective peers from shareholder groups and I have personally met with many of our shareholders. I wish to continue this dialogue in the future.

Joerg Reinhardt

Chairman of the Board of Directors

SUMMARY OF OUR CORPORATE GOVERNANCE REGIME



Leadership Structure

Independent, non-executive Chairman and separate CEO

Board Governance

Structure (as per January 1, 2014)

Independence: All Board members are independent. Board Committees: The Board has delegated certain of its duties to five Board Committees:

– Audit and Compliance Committee

– Compensation Committee

– Governance, Nomination and Corporate Responsibilities Committee

– Research & Development Committee

– Risk Committee

Composition

The Novartis Board of Directors is diverse in terms of education, experience, geographical origin and interpersonal skills. The biographies of the Board members (see "Item 6. Directors, Senior Management and Employees—6A Directors and Senior Management") set out their particular qualifications.

Processes

The processes of the Board have a decisive influence on the effectiveness of the Board. The Board has implemented best practices for all such processes. Important elements include the agenda of Board meetings (making sure that the Board deals with all important topics), information submitted to the Board (ensuring that the Board receives sufficient information from management to perform its supervisory duty and to make decisions that are reserved for the Board) and Board room behavior (ensuring an efficient and balanced decision-making process).

Shareholder Rights

Each share registered entitles the holder to one vote at General Meetings. The General Meeting passes resolutions and elections with the absolute majority of the votes represented at the meeting: The approval of two-thirds of the votes represented at the meeting is required by law for certain important resolutions.

Shareholders with 10% of the share capital may request an extraordinary General Meeting of shareholders and shareholders having shares with an aggregate nominal value of CHF 1 million can put items on the agenda of a General Meeting of shareholders.

Shareholders have the right to receive dividends, appoint proxies and hold such other rights as are granted under Swiss Law.

Only shareholders registered in the Novartis share register may exercise their voting rights. The registration does not affect the tradability of Novartis shares.

Shareholders with shares in excess of 2% of the registered share capital who want to vote those shares exceeding the 2% threshold need approval from the Board to register those shares as shares with voting rights. The purpose of this approval is to prevent a minority shareholder from dominating the General Meeting to the disadvantage of the majority of the shareholders. This is necessary given that many shareholders do not register their shares and therefore cannot vote their shares and because shareholder representation at General Meetings has traditionally been low in Switzerland.

OUR CORPORATE GOVERNANCE FRAMEWORK

Laws and Regulations

Novartis is subject to the laws of Switzerland, in particular Swiss company and securities laws, and to the securities laws of the United States as applicable to foreign private issuers of securities.

In addition, Novartis is subject to the rules of the Swiss Stock Exchange (SIX Swiss Exchange), including the Directive on Information relating to Corporate Governance.

Novartis is also subject to the rules of the New York Stock Exchange (NYSE) as applicable to foreign private issuers of securities. The NYSE requires Novartis to describe any material ways in which its corporate governance differs from those of domestic US companies listed on the NYSE. These differences are:

- shareholders of Novartis do not receive written reports from committees of the Board of Directors;
- the external auditors are appointed by the shareholders at the Annual General Meeting, as opposed to being appointed by the Audit and Compliance Committee;
- while the shareholders cannot vote on all equity-compensation plans, they are entitled to hold a consultative vote on the compensation system of Novartis. The vote takes place before every significant change to the compensation system, but at least every third Annual General Meeting;
- the Board of Directors 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 of Directors has responsibility for overseeing the performance evaluation of the Board of Directors and of the Executive Committee; and
- the full Board of Directors has responsibility for setting the objectives relevant to the compensation of the Chief Executive Officer, and for the evaluation of the performance of the CEO.

Swiss Code of Best Practice for Corporate Governance

Novartis applies the Swiss Code of Best Practice for Corporate Governance.

Novartis Corporate Governance Standards

Novartis has incorporated the corporate governance standards described above into the Articles of Incorporation and the Regulations of the Board of Directors, its Committees and the Executive Committee (www.novartis.com/corporate-governance).

The Corporate Governance and Nomination Committee regularly reviews these standards and principles in the light of prevailing best practices and makes recommendations for improvements of the corporate governance framework of Novartis for consideration by the full Board of Directors.

Additional corporate governance information can be found on the Novartis website:

http://www.novartis.com/corporate-governance

Printed copies of the Novartis Articles of Incorporation, Regulations of the Board and Charters of Board Committees can be obtained by writing to: Novartis AG, Attn: Corporate Secretary, Lichtstrasse 35, CH-4056 Basel, Switzerland.

OUR SHAREHOLDERS

Shares

Share Capital of Novartis AG

The share capital of Novartis AG is CHF 1,353,096,500 fully paid-in and divided into 2,706,193,000 registered shares, each with a nominal value of CHF 0.50. Novartis has neither authorized nor conditional capital. There are no preferential voting shares; all shares have equal voting rights. No participation certificates, non-voting equity securities (Genussscheine) or profit-sharing certificates have been issued.

Novartis shares are listed and traded on the SIX Swiss Exchange (Valor No. 001200526, ISIN CH0012005267, symbol: NOVN) as well as on the NYSE in the form of American Depositary Receipts (ADRs) representing Novartis American Depositary Shares (ADSs) (Valor No. 567514, ISIN US66987V1098, symbol: NVS).

The holder of an ADR has the rights enumerated in the Deposit Agreement (such as the right to vote and to receive a dividend). The ADS depositary of Novartis, JPMorgan Chase Bank, New York, holding the Novartis shares underlying the ADRs, is registered as shareholder in the share register of Novartis. An ADR is not a Novartis share and an ADR holder is not a Novartis shareholder. ADR holders exercise their voting rights by instructing the depositary to exercise their voting rights. Each ADR represents one Novartis share.

Share Repurchase Programs

Novartis began repurchasing its shares in 1999. Since then, five share repurchase programs have been completed with the repurchase of shares worth CHF 19 billion. Shares repurchased under the first program were not cancelled. However, shares repurchased under the other four programs were cancelled. At the Annual General Meeting in February 2008, shareholders authorized the Board of Directors to launch a sixth program to repurchase shares up to a maximum amount of CHF 10 billion via a second trading line on the SIX Swiss Exchange. In 2008, a total of six million shares were repurchased at an average price of CHF 49.42 per share and cancelled. The share repurchase program was suspended in April 2008 in favor of debt repayment. In December 2010, the Board of Directors announced the reactivation of the share repurchase program to minimize dilution to existing Novartis shareholders in connection with the proposed merger of Alcon, Inc. into Novartis. In 2011, 39,430,000 shares were

repurchased at an average price of CHF 52.81 per share and cancelled. In 2012, no shares were repurchased. On November 22, 2013, Novartis announced to buy back shares via the second trading line of up to $5 billion spread over two years. Until year-end 2013, 2,160,000 shares were repurchased at an average price of CHF 70.58 per share under the share repurchase program.

Changes in Share Capital

During the last three years, the following changes took place to the share capital of Novartis:

In 2011, for the purpose of completing the merger of Alcon, Inc. into Novartis AG, the share capital was increased by CHF 54 million, from CHF 1,318,811,500 to CHF 1,372,811,500, through the issuance of 108,000,000 fully paid-in registered shares with a nominal value of CHF 0.50 each.

In 2012, Novartis reduced its share capital by CHF 19.7 million, from CHF 1,372,811,500 to CHF 1,353,096,500 by cancelling 39.43 million shares repurchased on the second trading line during 2011. In 2013, there were no changes to the share capital of Novartis.

Capital Changes

	Number of shares			
Year	**As of Jan 1**	**Changes in shares**	**As of Dec 31**	**Changes in CHF**
2011	2,637,623,000	108,000,000	2,745,623,000	54,000,000
2012	2,745,623,000	(39,430,000)	2,706,193,000	(19,715,000)
2013	2,706,193,000		2,706,193,000	

Convertible or Exchangeable Securities

Novartis has not issued convertible or exchangeable bonds, warrants, options or other securities granting rights to Novartis shares, other than options granted to associates as an element of compensation.

Shareholdings

Significant Shareholders

According to the share register, as of December 31, 2013, the following registered shareholders (including nominees and the ADS depositary) held more than 2% of the total share capital of Novartis with the right to vote these shares:[8]

- Shareholders: Novartis Foundation for Employee Participation, with its registered office in Basel, Switzerland, holding 3.0%; and Emasan AG, with its registered office in Basel, Switzerland, holding 3.3%;
- Nominees: JPMorgan Chase Bank, New York, holding 11.1%; Nortrust Nominees, London, holding 3.2%; and The Bank of New York Mellon, New York, holding 4.6% through its nominees, Mellon Bank, Everett, (2.8%) and The Bank of New York Mellon, Brussels, Belgium, (1.8%); and
- ADS depositary: JPMorgan Chase Bank, New York, holding 11.7%.

According to a disclosure notification filed with Novartis AG, Norges Bank (Central Bank of Norway), Oslo, Norway, held 2.03% of the share capital of Novartis AG as of December 31, 2013.

[8] Excluding 4.9% of the share capital held by Novartis AG and its subsidiaries (excluding foundations) as treasury shares

According to disclosure notifications filed with Novartis AG and the SIX Swiss Exchange, each of the following shareholders held between 3% and 5% of the share capital of Novartis AG as of December 31, 2013:

– Capital Group Companies, Inc., Los Angeles, USA

– BlackRock, Inc., New York, USA

Disclosure notifications pertaining to shareholdings in Novartis AG that were filed with Novartis AG and the SIX Swiss Exchange are published on the latter's electronic publication platform, and can be accessed via the database search page:

http://www.six-exchange-regulation.com/obligations/disclosure/ major_shareholders_en.html

Novartis has not entered into any agreement with any shareholder regarding the voting or holding of Novartis shares.

Cross Shareholdings

Novartis has no cross shareholdings in excess of 5% of capital or voting rights with any other company.

Distribution of Novartis Shares

The information in the following tables relates only to registered shareholders and does not include holders of unregistered shares. Also, the information provided in the tables below cannot be assumed to be representative of the entire Novartis investor base since nominees and JPMorgan Chase Bank, as ADS depositary, are registered as shareholders for a large number of beneficial owners.

As of December 31, 2013, Novartis had approximately 155,000 registered shareholders.

The following table provides information about the distribution of registered shareholders by number of shares held:

Number of Shares Held

As of December 31, 2013	Number of registered shareholders	% of registered share capital
1-100	19,786	0.05
101-1,000	92,735	1.51
1,001-10,000	38,401	4.00
10,001-100,000	3,600	3.48
100,001-1,000,000	480	5.36
1,000,001-5,000,000	72	5.97
5,000,001 or more[1]	32	52.18
Total registered shareholders/shares	155,106	72.55
Unregistered shares		27.45
Total		**100.00**

(1) Including significant registered shareholders as listed above

The following table provides information about the distribution of registered shareholders by type:

Registered Shareholders by Type

As of December 31, 2013	Shareholders in %	Shares in %
Individual shareholders	96.04	11.93
Legal entities	3.87	37.18
Nominees, fiduciaries and ADS depositary	0.09	50.89
Total	**100.00**	**100.00**

The following table provides information about registered shareholders by country:

Registered Shareholders by Country

As of December 31, 2013	Shareholders in %	Shares in %
France	2.65	0.93
Germany	4.69	3.66
Switzerland[1]	89.29	40.80
United Kingdom	0.48	3.04
United States	0.27	47.35
Other countries	2.62	4.22
Total	**100.00**	**100.00**

(1) Excluding 4.9% of the share capital held by Novartis AG and its subsidiaries (excluding foundations) as treasury shares

SHAREHOLDER RIGHTS

Right to Vote ("One Share, One Vote")

Each share registered with the right to vote entitles the holder to one vote at General Meetings. Shares can only be voted at a General Meeting if they are registered with the Novartis Share Register latest on the third business day before the General Meeting ("X-3 business days").

ADR holders may vote by instructing JPMorgan Chase Bank, the ADS depositary, to exercise the voting rights attached to the registered shares underlying the ADRs. JPMorgan Chase Bank exercises the voting rights for registered shares underlying ADRs for which no voting instructions have been given by providing a discretionary proxy to an uninstructed independent designee. Such designee has to be a shareholder of Novartis.

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; or

– The dissolution of Novartis AG.

In addition, the law provides for a special quorum also for other resolutions, such as, for example, for 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 shares with an aggregate nominal value of at least CHF 1 million may request that an item be included in the agenda of a General Meeting of shareholders. Such requests must be made in writing at least 45 days before the date of the General Meeting, specify the item to be included in the agenda and contain the proposal on which the shareholder requests a vote.

Shareholders have the right to receive dividends, to vote and hold such other rights as granted under Swiss Law. Shareholders can vote their shares by themselves or appoint another shareholder, the corporate proxy, the independent proxy or a custody proxy as proxy. As from the General Meeting 2014 the corporate proxy and the custody proxy are abolished. Shareholders that do not want to vote their shares by themselves, can then either appoint another shareholder or the independent proxy as a proxy. The right to vote and other rights associated with a registered share may only be exercised by a shareholder, usufructuary or nominee who is registered in the Novartis share register.

Shareholder Registration

No restrictions apply on the transferability of Novartis shares. However, only shareholders registered in the Novartis share register may exercise their voting rights. In order to be registered, a shareholder must declare that he or she acquired the shares in his or her own name and for his or her own account. The Articles of Incorporation provide that the Board of Directors may register nominees with the right to vote. For restrictions on registration of nominees, please see below.

The Articles of Incorporation provide that no shareholder shall be registered with the right to vote for more than 2% of the registered share capital. The Board of Directors may, upon request, grant an exemption from this restriction. When considering the grant of an exemption, particular consideration will be given as to whether the shareholder supports the Board of Directors in creating sustainable value and has a long-term investment horizon. In 2013, no exemptions were requested. Exemptions are in force for the registered Significant Shareholders listed under—Our Shareholders—Shareholdings—Significant Shareholders, and for Norges Bank (Central Bank of Norway), Oslo.

The same restrictions apply to holders of ADRs as those holding Novartis shares.

Given that shareholder representation at General Meetings has traditionally been low in Switzerland, Novartis considers the restriction on registration necessary to prevent a minority shareholder from dominating a General Meeting.

The Articles of Incorporation provide that no nominee shall be registered with the right to vote for more than 0.5% of the registered share capital. The Board of Directors may, upon request, grant an exemption from this restriction if the nominee discloses the names, addresses and the number of shares of the persons for whose account it holds 0.5% or more of the registered share capital. Exemptions are in force for the nominees listed under—Our Shareholders—Shareholdings—Significant Shareholders.

The same restrictions apply to holders of ADRs as those holding Novartis shares.

The restrictions on registration contained in the Articles of Incorporation may only be removed by 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 that are linked to each other or act in concert to circumvent the restrictions on registration are treated as one person or nominee for the purposes of the restrictions on registration.

No Restriction on Trading of 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. No restrictions are imposed by Novartis or JPMorgan Chase Bank on the trading of registered Novartis shares or ADRs. Registered Novartis shareholders or ADR holders may, therefore, purchase or sell their Novartis shares or ADRs at any time, including prior to a General Meeting regardless of the record date. The record date serves only to determine the right to vote at a General Meeting of Novartis.

Change-of-Control Provisions

No Opting Up, No Opting Out

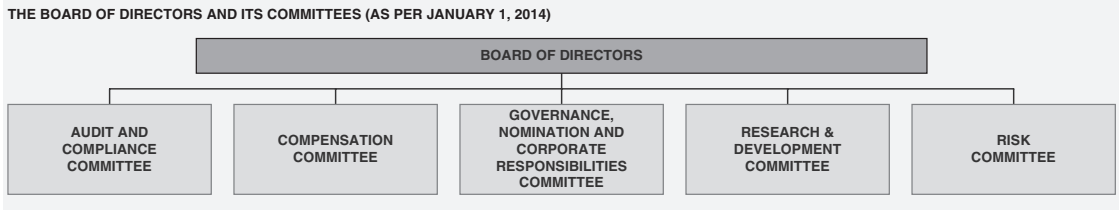
The Swiss Stock Exchange Act provides that anyone who, directly, indirectly or acting in concert with third parties, acquires equity securities exceeding 33⅓% of the voting rights of a company—whether or not such rights are exercisable—is required to make an offer to acquire all listed equity securities of that company. A company may raise this threshold to 49% of the voting rights (“opting up”) or may, under certain circumstances, waive the threshold (“opting out”). Novartis has not adopted any such measures.

Change-of-Control Clauses

There are no change-of-control clauses (including no “golden parachutes,” special provisions on the cancellation of contractual arrangements, agreements concerning special notice periods or long-term contracts exceeding 12 months, waivers of lock-up periods for options, shorter vesting periods, and no additional contributions to pension funds) benefiting Board members. With respect to members of the Executive Committee, see below under—Our Management—Contracts with Members of the Executive Committee.

OUR BOARD OF DIRECTORS

As of January 1, 2014, the Chairman's Committee has been disbanded, a new Research & Development Committee has been created, and the mandate of the Corporate Governance and Nomination Committee (renamed "Governance, Nomination and Corporate Responsibilities Committee") has been amended to cover corporate responsibility matters. The membership of all Board committees will be determined by the Board of Directors effective February 25, 2014.



Election and Term of Office

All Board members are elected individually.

Board members are elected to terms of office of three years or less by shareholders at General Meetings. As from 2014, our Board members will be re-elected annually. Under Swiss law, a General Meeting of shareholders is entitled to remove any Board member at any time, regardless of his or her remaining term of office.

The average tenure of Board members is seven years and the average age is 61. A Board member must retire after reaching the age limit of 70. Under special circumstances, shareholders may grant an exemption from this rule and re-elect a Board member for additional terms of office. There is no

mandatory term limit for Board members, so as not to lose the value of the insight and knowledge of Novartis' 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[1]
Joerg Reinhardt, Ph.D. . . .	D	1956	2013	2013	2014
Ulrich Lehner, Ph.D.	D	1946	2002	2011	2014
Enrico Vanni, Ph.D.	CH	1951	2011	2011	2014
Dimitri Azar, M.D., MBA .	US	1959	2012	2012	2014
Verena A. Briner, M.D. . .	CH	1951	2013	2013	2014
William Brody, M.D., Ph.D.	US	1944	2009	2012	2014
Srikant Datar, Ph.D.	US	1953	2003	2012	2014
Ann Fudge	US	1951	2008	2011	2014
Pierre Landolt, Ph.D.	CH	1947	1996	2011	2014
Andreas von Planta, Ph.D.	CH	1955	2006	2012	2014
Charles L. Sawyers, M.D. .	US	1959	2013	2013	2014
Dr. Ing. Wendelin Wiedeking	D	1952	2003	2012	2014
William T. Winters	UK/US	1961	2013	2013	2014
Rolf M. Zinkernagel, M.D.	CH	1944	1999	2012	2014

[1] Legally required mandatory re-election due to introduction of yearly re-election of Board members under revised Swiss company law

Board Member Qualifications

The Corporate Governance and Nomination Committee determines the criteria for the selection of Board members and Board committee members. Factors considered include skills and knowledge, diversity of viewpoints, professional backgrounds and expertise, business and other experience relevant to the business of Novartis, the ability and willingness to commit adequate time and effort to Board and committee responsibilities, the extent to which personality, background, expertise, knowledge and experience will enable them to interact with other Board members to build an effective and complementary Board, and whether existing board memberships or other positions held by a candidate could lead to a conflict of interest.

The biographies of the Board members (see "Item 6. Directors, Senior Management and Employees—6A Directors and Senior Management") set out the particular qualifications that led the Board of Directors to conclude that a Board member is qualified to serve on the Board of Directors, creating a Board that today is diverse in terms of background, qualifications, interests and skills.

Board Diversity

The diversity of a board of directors is a critical success factor for its effectiveness. Thus, when the Corporate Governance and Nomination Committee identifies new Board member candidates to propose to the shareholders for election, the maintenance and improvement of the diversity of the Board is an important criterion. The Board's aspiration is to have a diverse Board in all aspects of diversity. This includes diversity in terms of geographic origin, background, gender, race, faith, education, experience, viewpoint, interests and technical and interpersonal skills.

Role of the Board of Directors and the Board Committees

The Board of Directors is responsible for the overall direction and supervision of the management and holds the ultimate decision-making authority for Novartis AG, except for those decisions reserved to the shareholders.

Until the end of 2013, the Board of Directors delegated certain responsibilities to five committees: Chairman's Committee, Compensation Committee, Audit and Compliance Committee, Corporate Governance and Nomination Committee and Risk Committee as set out below (responsibilities described with the terms "overseeing" or "reviewing" are subject to final approval by the Board of Directors). As of January 1, 2014, the Chairman's Committee has been disbanded, a new Research & Development Committee has been created, and the mandate of the Corporate Governance and Nomination Committee has been amended to cover corporate responsibility matters. The membership of all Board committees will be determined by the Board of Directors effective February 25, 2014.

Responsibilities	Membership comprises	Number of meetings held in 2013/ approximate average duration (hrs) of each meeting Attendance	Link
THE BOARD OF DIRECTORS		**12/6.30**	
The primary responsibilities of the Board of Directors include: —Setting the strategic direction of the Group; —Determining the organizational structure and governance of the Group; —Appointing, overseeing and dismissing key executives and planning their succession; —Determining and overseeing the financial planning, accounting, reporting and controlling; —Approving the annual financial statements and the corresponding financial results releases; and —Approving major transactions and investments.	**Joerg Reinhardt** Ulrich Lehner Enrico Vanni Dimitri Azar Verena A. Briner[2] William Brody Srikant Datar Ann Fudge Pierre Landolt Andreas von Planta Charles L. Sawyers[2] Wendelin Wiedeking William T. Winters[2] Rolf M. Zinkernagel	4 12 12 11 8 12 12 10 11 12 6 8 9 9	Articles of Incorporation of Novartis AG Regulations of the Board of Directors, its Committees and the Executive Committee of Novartis AG (Board Regulations) http://www.novartis.com/corporate-governance
THE CHAIRMAN'S COMMITTEE		**7/1.45**	
The primary responsibilities of this committee include: —Commenting on significant matters before the Board of Directors makes a decision; —Recommending key executive appointments to the Board of Directors; —Dealing with Board matters arising in between Board meetings, including the taking of required preliminary actions; and —Approving transactions and investments as delegated by the Board of Directors.	**Joerg Reinhardt** Ulrich Lehner Srikant Datar Enrico Vanni[2]	2 6 6 6	Charter of the Chairman's Committee http://www.novartis.com/corporate-governance

Responsibilities	Membership comprises	Number of meetings held in 2013/ approximate average duration (hrs) of each meeting Attendance	Link
THE AUDIT AND COMPLIANCE COMMITTEE The primary responsibilities of this committee include: —Overseeing the internal auditors; —Supervising the external auditors and selecting and nominating the external auditors for election by the meeting of the shareholders; —Overseeing the accounting policies, financial controls and compliance with accounting and internal control standards; —Approving quarterly financial statements and financial results releases; —Overseeing internal control and compliance processes and procedures; and —Overseeing compliance with laws and external and internal regulations. The Audit and Compliance Committee has the authority to retain external consultants and other advisors.	**Srikant Datar** Dimitri Azar[2] Ulrich Lehner[4] Enrico Vanni Andreas von Planta	**6/2.30** 6 4 5 6 6	Charter of the Audit and Compliance Committee http://www.novartis.com/corporate-governance

(1) Chair, since August 2013

(2) Since February 2013

(3) Chair

(4) Audit Committee Financial Expert as defined by the US Securities and Exchange Commission (SEC)

Responsibilities	Membership comprises	Number of meetings held in 2013/ approximate average duration (hrs) of each meeting Attendance	Link
THE RISK COMMITTEE The primary responsibilities of this committee include: —Ensuring that Novartis has implemented an appropriate and effective risk management system and process; —Ensuring that all necessary steps are taken to foster a culture of risk-adjusted decision making without constraining reasonable risk-taking and innovation; —Approving guidelines and reviewing policies and processes; and —Reviewing with management, internal auditors and external auditors the identification, prioritization and management of the risks, the accountabilities and roles of the functions involved with risk management, the risk portfolio and the related actions implemented by management. The Risk Committee has the authority to retain external consultants and other advisors.	**Andreas von Planta** Srikant Datar Ann Fudge Ulrich Lehner Wendelin Wiedeking	**4/2.15** 4 4 4 4 4	Charter of the Risk Committee http://www.novartis.com/corporate-governance

Responsibilities	Membership comprises	Number of meetings held in 2013/ approximate average duration (hrs) of each meeting Attendance	Link
THE COMPENSATION COMMITTEE		**6/2.30**	
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; —Approving the employment terms of key executives; —Deciding on the variable compensation of the Chief Executive Officer, the members of the Executive Committee and other key executives for the past year; and —Deciding on the base salary and the total target compensation of the Chief Executive Officer, the members of the Executive Committee and other key executives for the coming year. The Compensation Committee has the authority to retain external consultants and other advisors.	**Enrico Vanni** William Brody Srikant Datar Ann Fudge[2] Ulrich Lehner	6 6 5 4 6	Charter of the Compensation Committee http://www.novartis.com/corporate-governance
THE CORPORATE GOVERNANCE AND NOMINATION COMMITTEE		**4/2.15**	
The primary responsibilities of this committee include: —Designing, reviewing and recommending to the Board corporate governance principles; —Reviewing on a regular basis the Articles of Incorporation with a view to reinforcing shareholder rights; —Reviewing on a regular basis the composition and size of the Board and its committees; —Reviewing annually the independence status of each Board member; —Reviewing directorships and agreements of Board members for conflicts of interest and dealing with conflicts of interest; —Identifying candidates for election as Board member; —Assessing existing Board members and recommending to the Board whether they should stand for re-election; —Preparing and reviewing the succession plan for the CEO; and —Developing and reviewing an orientation program for new Board members and an ongoing education plan for existing Board members. The Corporate Governance and Nomination Committee has the authority to retain external consultants and other advisors.	**Pierre Landolt** Ann Fudge Ulrich Lehner Andreas von Planta Wendelin Wiedeking Rolf M. Zinkernagel	4 4 3 3 3 4	Charter of the Corporate Governance and Nomination Committee http://www.novartis.com/corporate-governance

(1) Chair

(2) Since February 2013

The Functioning of the Board of Directors

The Novartis Board of Directors takes decisions as a whole, supported by its five Board committees. Each Board committee has a written charter outlining its duties and responsibilities and is led by a Chair elected by the Board of Directors.

The Board of Directors and its Board committees meet regularly throughout the year. The Chairs set the agendas of their meetings. Any Board member may request a Board meeting, a meeting of a Board committee or the inclusion of an item on the agenda of such meetings. Board members are provided, in advance of meetings, with materials intended to prepare them to discuss the items on the agenda.

The Chairman

Joerg Reinhardt has been acting as independent, non-executive Chairman since August 1, 2013. He was the Board's preferred candidate for the position, ideally combining industry and Novartis experience while being independent in character and judgment and meeting Novartis' independence criteria.

In his role as independent, non-executive Chairman Joerg Reinhardt:

- provides leadership to the Board of Directors in its governance role;
- supports and advises the Chief Executive Officer;
- ensures effective succession plans on Board and Executive Committee level;
- ensures that the Board and its committees work effectively;
- sets the agenda, style and tone of the Board discussions, promoting a constructive debate and effective decision-making;
- supported by the Corporate Governance and Nomination Committee, ensures that all Board committees are properly established, composed and operated;
- ensures that the performance of the Board is evaluated on an annual basis;
- ensures introduction programs for new Board members and continuing education for all Board members;
- ensures effective communication with Novartis' shareholders; and
- promotes effective relationships and communications between the Board members and the members of the Group Executive Committee.

Meetings of the Board of Directors

The Board of Directors has meetings with the members of the Executive Committee as well as private meetings without members of the Executive Committee.

In 2013, there were 12 meetings of the Board of Directors. Given that as of February 1, 2013 all Board members were independent, no separate meetings of the independent Board members were held after February 1, 2013.

During 2013, the agendas for Board meetings, among other topics, included the following topics: annual report and media release, agenda for the Annual General Meeting, group targets, personal objectives of the Chief Executive Officer (January meeting), pipeline update and M&A and BD&L review (April meeting), strategy (separate, dedicated 3 day meeting in August), financial and business reviews (at each meeting), and major projects, and investments and transactions (when required).

Topics addressed in private meetings included performance evaluation of top management (January meeting), succession planning (August meeting) and Board self-evaluation (January meeting).

Dr. Daniel Vasella

Dr. Daniel Vasella, the former Chairman, has been appointed Honorary Chairman in recognition of his significant achievements for Novartis. There are no rights associated with this role, and Dr. Vasella does not attend Board meetings. No compensation is provided in relation to this role other than administrative support and security which are usual and customary for a position of this nature.

In addition, based on a consulting agreement effective until the end of 2016, Dr. Vasella is available to Novartis, at Novartis' request and discretion, to provide specific consulting services, in particular coaching of high potential associates of Novartis, allowing Novartis to benefit from his knowledge and long-term experience in shaping Novartis. Dr. Vasella will not have any influence on the Board or on the management of Novartis.

Independence of Board Members

The independence of Board members is a key corporate governance issue. Accordingly, Novartis established independence criteria that are intended to reflect international best-practice standards. These independence criteria can be found on the Novartis website:

www.novartis.com/investors/governance-documents.shtml

– The Novartis independence criteria require that the majority of Board members and any member of the Audit and Compliance Committee, the Compensation Committee and the Corporate Governance and Nomination Committee meet the Novartis independence criteria. In summary, these include, inter alia, (i) a Board member not having received compensation of more than $120,000 per year from Novartis, except for Board Compensation, (ii) a Board member not having been within the last three years an employee of Novartis, (iii) a family member not having been within the last three years an executive officer of Novartis, (iv) a Board member or a family member not being employed by the auditor of Novartis, (v) a Board member or a family member not being a board member, employee, or 10% shareholder of an enterprise, that has made payments to, or received payments from, Novartis, in excess of the greater of $1 million or 2% of that enterprise's gross revenues.

– In addition, the Board members are bound by the Novartis Conflict of Interest Policy which guarantees that a Board member's potential personal interests cannot influence the decision making of the Board of Directors.

– The Corporate Governance and Nomination Committee annually submits to the Board of Directors 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 top management and from any of his/her current or former colleagues.

In its meeting of December 13, 2013, the Board of Directors determined that all of its members are independent. The Board of Directors has delegated Rolf M. Zinkernagel, M.D., to the Scientific Advisory Board of the Novartis Institute for Tropical Diseases (NITD), and both Dr. Zinkernagel, M.D. and William Brody, M.D., Ph.D. to the Board of Directors of the Genomics Institute of the Novartis Research Foundation (GNF). The Board of Directors concluded that these activities are supervisory and not consultatory in nature and do not affect Dr. Zinkernagel's or Dr. Brody's independence as a Board member.

Relationship of Non-Executive Board Members with Novartis

None of the Board members is or was a member of the management of Novartis AG or of any other Novartis Group company in the three financial years until and including 2013.

There are no significant business relationships of any Board member with Novartis AG or with any other Novartis Group company.

Performance and Effectiveness Evaluation of the Board

Process

Every year the Board conducts an evaluation of its performance and effectiveness. The process is kicked-off by each Board member completing a questionnaire on the performance and effectiveness of the Board and of each Board committee of which he/she is a member. This is then the basis for a deep, qualitative review of the Board's performance. The review is led by the Chairman who holds individual discussions with each Board member, followed-up by discussions by the full Board and by each Board Committee. Identified gaps and shortcomings are recorded and related remediation actions are agreed.

The performance and effectiveness evaluation includes an assessment of the ability and willingness of each Board member to commit adequate time and effort to Board and committee responsibilities as provided for in the Charter of the Corporate Governance and Nomination Committee.

On a regular basis this internal process is extended to cover individual Board member assessments and/or the process is conducted by an independent outside consultant.

The results of the 2013 performance and effectiveness evaluation were discussed at the January 2014 meeting of the Board. It was concluded that the Board of Directors and its committees operate effectively. Progress in a number of areas was noted, including expanding and deepening shareholder engagement. There is room for further improvement in a number of areas including strengthening the geographic and gender diversity of the Board.

Content

The performance review examines the performance and effectiveness, and strengths and weaknesses of individual Board members, and of the full Board and each Board committee. The review includes composition, structure, processes, tasks and governance of the Board and its committees, effectiveness of meetings, behavior, team dynamics and interactions, quality of briefing materials and presentations, follow-up actions on decisions, relationship to senior management and the role and leadership of the Chairman. The list of performance criteria is customized for each committee, addressing its specific tasks and responsibilities.

Information and Control Systems of the Board of Directors vis-à-vis Management

Information on the Management

The Board of Directors ensures that it receives sufficient information from the Executive Committee to perform its supervisory duty and to make decisions that are reserved for the Board of Directors. The authority of the Board of Directors to determine the compensation of the members of the Executive Committee is an important element to ensure the alignment of Executive Committee members with the interests of Novartis and its shareholders.

The Board of Directors obtains the information required to perform its duties through several means:

– the Chief Executive Officer informs the Board regularly about current developments;

– the minutes of Executive Committee meetings are made available to the Board members;

– meetings or teleconferences are held as required between Board members and the Chief Executive Officer;

– the Board of Directors regularly meets with all members of the Executive Committee;

– the Board of Directors is updated in detail by each Division Head on a quarterly basis;

– by invitation, other members of management are invited to attend Board meetings to report on areas of the business within their responsibility; and

– Board members are entitled to request information from members of the Executive Committee or any other Novartis associate, and may also 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 of Directors and the management in meeting the requirements and expectations of stakeholders and shareholders.

In particular, the Chief Financial Officer, the Group General Counsel and representatives of the external auditors are invited to meetings of the Audit and Compliance Committee. Furthermore, the Heads of Internal Audit, Financial Reporting and Accounting, Compliance, Quality as well as the Business Practices Officers, report on a regular basis to the Audit and Compliance Committee.

The Audit and Compliance Committee reviews financial reporting processes on behalf of the Board of Directors. For each quarterly and annual release of financial information, the Disclosure Review Committee reviews the release for accuracy and completeness of disclosures. The Disclosure Review Committee is chaired by the Chief Financial Officer and is attended by the Chief Executive Officer, the Group General Counsel, the Heads of the Divisions, the Heads of Finance of the Divisions and the Heads of the following Corporate Functions: Treasury, Tax, Financial Reporting and Accounting, Internal Audit and Investor Relations. Decisions made by the Disclosure Review Committee are reviewed by the Audit and Compliance Committee before publication of the quarterly and annual releases.

The Risk Committee oversees the risk management system and processes, as well as reviews the risk portfolio of the Group to ensure appropriate and professional management of the risks. For this purpose the Corporate Risk Management function and the risk owners of the Divisions report on a regular basis to the Risk Committee. The Group General Counsel and the Head of Internal Audit are also invited to the meetings.

Novartis Management Information System

Novartis produces comprehensive consolidated financial statements on a monthly basis for the total Group and its divisions. These are typically available within ten 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 US Dollars and on a constant currency basis;

– consolidated balance sheet as of the month end in accordance with IFRS in US Dollars;

– consolidated cash flow on a monthly, quarter-to-date and year-to-date basis in accordance with IFRS in US Dollars; and

– supplementary data on a monthly, quarterly and year-to-date basis such as free cash flow and gross and net liquidity, headcount, personnel costs, working capital, earnings per share and economic value added as defined by Novartis and on a US Dollars basis where applicable.

The above information is made available to the members of the Board on a monthly basis. An analysis of the key deviations from prior year or target is also provided.

The Board also receives on a quarterly basis an outlook of the full year results in accordance with IFRS and Core, together 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 and the consolidated income statement in US Dollars in accordance with IFRS and Core (as defined by Novartis) contained in the Plan.

The Board does not have direct access to Novartis' 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; assists organizational units in the accomplishment of objectives by providing an independent approach to the evaluation, improvement and effectiveness of their internal control framework; prepares reports regarding the audits it has performed; and reports actual or suspected irregularities to the Audit and Compliance Committee and the CEO. The Audit and Compliance Committee regularly reviews the scope of Internal Audit, the audit plans and the results of the internal audits.

Risk Management

The Corporate Risk Management function is overseen by the independent Risk Committee of the Board of Directors. The Compensation Committee works closely with the Risk Committee to ensure that the compensation system does not lead to excessive risk-taking by management (for details see our Compensation Report).

Organizational and process measures have been designed to identify and mitigate risks at an early stage. Organizationally, the individual divisions are responsible for risk and risk mitigation, with specialized corporate functions, such as Group Finance, Group Quality Operations, Corporate Health, Safety, Environment, Business Continuity and Compliance, providing support and controlling the effectiveness of risk management by the Divisions in these respective areas.

Relations with Shareholders

Communication with shareholders allows the shareholders to be better informed on Novartis' strategy, business operations and governance, and the Board to learn about expectations and concerns of the shareholders and to address these.

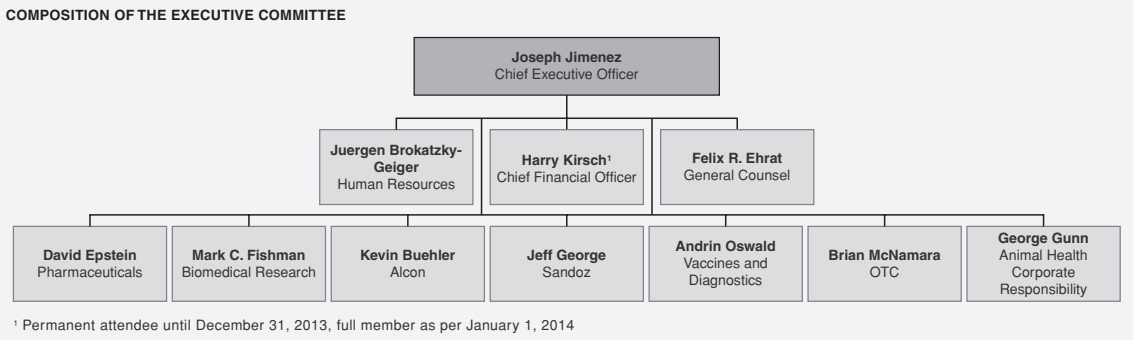
The CEO, with the CFO and the investor relations team, supported by the Chairman, is responsible for ensuring effective communication with shareholders.

Novartis communicates with its shareholders through the Annual General Meeting, meetings with groups of shareholders or with individual shareholders and through written or electronic communication with shareholders.

At the Annual General Meeting the Chairman, the CEO and other members of the Executive Committee and representatives of the external auditors are present and can answer questions of shareholders. Other meetings with shareholders may be attended by the Chairman, CEO, CFO, members of the Executive Committee and other members of senior management.

Topics discussed with shareholders may include strategy, business performance and corporate governance.

OUR MANAGEMENT



Composition of the Executive Committee

The Executive Committee is headed by the Chief Executive Officer. The members of the Executive Committee are appointed by the Board of Directors.

The organizational structure and the details of the responsibility of the Executive Committee are set forth in the Board Regulations (www.novartis.com/corporate-governance).

The Board of Directors has not concluded any contracts with third parties to manage the business.

Role and Functioning of the Executive Committee

The Board of Directors has delegated to the Executive Committee the overall responsibility for and oversight over the operational management of Novartis. This includes:

- Developing policies, strategies and strategic plans for approval by the Board of Directors and implementing those approved by the Board of Directors;
- Submitting to the Board of Directors and its committees proposed changes in management positions of material significance, investments, financial measures, acquisitions or divestitures, contracts of material significance and budgets;
- Preparing and submitting quarterly and annual reports to the Board of Directors or its committees;
- Informing the Board of Directors 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 optimized results;
- Promoting an active internal and external communications policy; and
- Dealing with any other matters as are delegated by the Board of Directors to the Executive Committee.

The Chief Executive Officer

The Chief Executive Officer, in addition to other duties that may be assigned to him by the Board of Directors:

- leads the Executive Committee, building and maintaining an effective executive team; and, together with the Executive Committee:
- is responsible for the operational management of Novartis;

– develops strategy proposals for recommendation to the Board and ensures that agreed strategies are implemented;

– plans human resourcing to ensure that Novartis has the capabilities and resources required to achieve its plans;

– develops an organizational structure and establishes processes and systems to ensure the efficient organization of resources;

– ensures that financial results, business strategies and, where appropriate, targets and milestones are communicated to the investment community, and, generally develops and promotes an effective communication with shareholders and other stakeholders;

– ensures that the business performance is consistent with the business principles and with legal and ethical standards;

– ensures that robust management succession and management development plans are in place and presented to the Board from time to time;

– develops processes and structures to ensure that capital investment proposals are reviewed thoroughly, that associated risks are identified and appropriate steps taken to manage the risks;

– develops and maintains an effective framework of internal controls over risk in relation to all business activities including Novartis' trading activities; and

– ensures that the flow of information to the Board is accurate, timely and clear.

Contracts with Members of the Executive Committee

In accordance with good corporate governance, employment contracts with members of the Executive Committee do not contain unusually long notice periods, change-of-control clauses (including no "golden parachutes," special provisions on the cancellation of contractual arrangements, agreements concerning special notice periods or long-term contracts exceeding 12 months, waivers of lock-up periods for options, shorter vesting periods, and no additional contributions to pension funds) or severance payments.

OUR INDEPENDENT EXTERNAL AUDITORS

Duration of the Mandate and Terms of Office

Based on a recommendation by the Audit and Compliance Committee, the Board of Directors nominates an independent auditor for election at the Annual General Meeting. PricewaterhouseCoopers (PwC) assumed its existing auditing mandate for Novartis in 1996. Bruno Rossi, auditor in charge, began serving in his role in 2013, and Michael P. Nelligan, global relationship partner, began serving in his role in 2009. The Audit and Compliance Committee ensures that these partners are rotated at least every five years.

Information to the Board of Directors and the Audit and Compliance Committee

The independent auditor, PwC, is responsible for opining on whether the audited consolidated financial statements comply with International Financial Reporting Standards (IFRS) and Swiss law and whether the separate parent company financial statements of Novartis AG comply with Swiss law. Additionally, PwC is responsible for opining on the effectiveness of internal control over financial reporting.

The Audit and Compliance Committee, acting on behalf of the Board of Directors, is responsible for overseeing the activities of PwC. During 2013, the Audit and Compliance Committee held 6 meetings. At

each of these meetings, PwC was invited to attend during the discussion of agenda items that dealt with accounting, financial reporting or auditing matters and any other matters relevant to their audit.

On an annual basis, PwC provides the Audit and Compliance Committee the written disclosures required by the Public Company Accounting Oversight Board (PCAOB), and the Audit and Compliance Committee and PwC discuss PwC's independence from Novartis and Novartis' management.

The Audit and Compliance Committee recommended to the Board of Directors, and the Board of Directors approved, inclusion of the audited financial statements in the Annual Report for the year ended December 31, 2013.

The Audit and Compliance Committee, on a regular basis, evaluates the performance of PwC and, once yearly, based on this performance evaluation, determines whether PwC should be proposed to the Annual General Meeting for election. Also, once yearly, the auditor in charge and the global relationship partner report to the Board of Directors on the activities of PwC during the current year and on the audit plan for the coming year and answer any questions or concerns Board members might have on the performance of PwC, or on the work it has conducted or is planning to conduct.

In order to assess the performance of PwC, the Audit and Compliance Committee requires a self-evaluation report from PwC, holds private meetings with the Chief Executive Officer, the Chief Financial Officer and with the Head of Internal Audit and, if necessary, obtains an independent external assessment. The Board of Directors also meets with the auditor in charge and the global relationship partner. Criteria applied for the performance assessment of PwC include an evaluation of its technical and operational competence, its independence and objectivity, the sufficiency of the resources it has employed, its focus on areas of significant risk to Novartis, its willingness to probe and challenge, its ability to provide effective, practical recommendations, and the openness and effectiveness of its communications and coordination with the Audit and Compliance Committee, the Internal Audit function and management.

Pre-Approval of Audit and Non-Audit Services

The Audit and Compliance Committee's pre-approval is required for all services provided by PwC. These services may include audit services, audit-related services, tax services and other services.

Pre-approval is detailed as to the particular services or categories of services, and is subject to a specific budget. PwC and management report, on a quarterly basis, to the Audit and Compliance Committee regarding the extent of services provided in accordance with this pre-approval and the fees for the services performed to date. The Audit and Compliance Committee may also pre-approve additional services on a case-by-case basis.

Auditing and Additional Fees

PwC charged the following fees for professional services rendered for the 12-month periods ended December 31, 2013 and December 31, 2012:

	2013	2012
	$ thousands	**$ thousands**
Audit Services	28,590	28,960
Audit-Related Services	2,040	2,300
Tax Services	90	500
Other Services	250	190
Total	**30,970**	**31,950**

Audit Services are defined as the standard audit work performed each year in order to issue opinions on the parent company and consolidated financial statements of the Group, to issue opinions relating to the effectiveness of the Group's internal controls over financial reporting, and to issue reports on local statutory financial statements. Also included are audit services that can only be provided by the Group auditor, such as auditing of non-recurring transactions and implementation of new accounting policies, audits of accounting infrastructure system controls, pre-issuance reviews of quarterly financial results, consents and comfort letters and any other audit services required for SEC or other regulatory filings.

Audit-Related Services include those other assurance services provided by the independent auditor but not restricted to those that can only be provided by the auditor signing the audit report. They comprise services such as acquisition due diligence and related audits, audits of pension and benefit plans, IT infrastructure control assessments, contractual audits of third-party arrangements, assurance services on corporate responsibility reporting and compliance with corporate integrity agreements and consultation regarding new accounting pronouncements.

Tax Services represent tax compliance, tax returns, assistance with historical tax matters and other tax-related services.

Other Services include training in the finance area, advice for process improvements, benchmarking studies, assessment of certain non-financial processes and license fees for use of accounting and other reporting guidance databases.

FURTHER INFORMATION

The Group Structure of Novartis

Novartis AG and Group Companies

Under Swiss company law, Novartis AG is organized as a corporation which 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 directly or indirectly all companies worldwide belonging to the Novartis Group. Except as described below, the shares of these companies are not publicly traded. The principal Novartis subsidiaries and associated companies are listed in Note 32 to the Group's consolidated financial statements.

Divisions

The businesses of Novartis are divided on a worldwide basis into six operating divisions, Pharmaceuticals, Alcon (eye care), Vaccines and Diagnostics, Sandoz (generics), Over-the-Counter and Animal Health, as well as Corporate activities.

Majority Holdings in Publicly Traded Group Companies

Novartis AG holds 75% of Novartis India Limited, with its registered office in Mumbai, India, and listed on the Bombay Stock Exchange (ISIN INE234A01025, ID: NOVARTIS). The total market value of the 25% free float of Novartis India Limited was $59.9 million at December 31, 2013, using the quoted market share price at the year end. Applying this share price to all the shares of the company the market capitalization of the whole company was $239.7 million and that of the shares owned by Novartis was $179.8 million.

Significant Minority Holdings in Publicly Traded Companies

Novartis AG holds

- 33.3% of the bearer shares of Roche Holding AG, with its registered office in Basel, Switzerland, and listed on the SIX Swiss Exchange (Valor No. 1203211, ISIN CH0012032113, symbol: RO). The market value of the Group's interest in Roche Holding AG, as of December 31, 2013, was $14.8 billion. The total market value of Roche Holding AG was $241.2 billion. Novartis does not exercise control over Roche Holding AG, which is independently governed, managed and operated.
- 24.9% of Idenix Pharmaceuticals, Inc., with its registered office in Delaware, USA, and listed on NASDAQ (Valor No. 1630029, ISIN US45166R2040, symbol: IDIX). The total market value of the 75.1% free float of Idenix Pharmaceuticals, Inc. was $602.1 million at December 31, 2013, using the quoted market share price at the year end. Applying this share price to all shares of the company, the market capitalization of the whole company was $801.4 million and that of the shares owned by Novartis was $199.3 million. Novartis does not exercise control over Idenix Pharmaceuticals, Inc., which is independently governed, managed and operated.

Political Contributions

Novartis will only make political contributions that support the strategic interests of Novartis, its shareholders and other stakeholders. Moreover, rules and procedures are in place to make sure that political contributions are never made with the expectation of a direct or immediate return for Novartis, and that they are fully compliant with applicable laws, regulations and industry codes.

In 2013 Novartis made political contributions (excluding contributions to industry associations) totaling approximately $1 million, mostly in the US and in Switzerland.

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 the NYSE.

Communications

Novartis publishes an Annual Report each year that provides information on the Group's results and operations. In addition to the Annual Report, Novartis prepares an annual report on Form 20-F that is filed with the SEC. Novartis discloses quarterly financial results in accordance with IFRS and issues press releases from time to time regarding developments in its businesses.

Novartis furnishes press releases relating to financial results and material events to the SEC via Form 6-K. An archive containing recent Annual Reports, annual reports on Form 20-F and quarterly results releases as well as related materials such as slide presentations and conference call webcasts, is on the Novartis website at http://www.novartis.com/investors

Information contained in reports and releases issued by Novartis are only correct and accurate at the time of release. Novartis does not update past releases to reflect subsequent events and advises against relying on them for current information.

Investor Relations Program

An Investor Relations team manages the Group's interaction with the international financial community. Several events are held each year to provide institutional investors and analysts various opportunities to learn more about Novartis.

Investor Relations is based at the Group's headquarters in Basel, Switzerland. A part of the team is located in the US to coordinate interaction with US investors. Information is available on the Novartis website: www.novartis.com/investors. Investors are also welcome to subscribe to a free e-mail service on this site.

Website Information

Topic	Information
Share Capital	Articles of Incorporation of Novartis AG http://www.novartis.com/corporate-governance Novartis key share data http://www.novartis.com/key-share-data
Shareholder Rights	Articles of Incorporation of Novartis AG http://www.novartis.com/corporate-governance Investor Relations information http://www.novartis.com/investors
Board Regulations	Board Regulations http://www.novartis.com/corporate-governance
Executive Committee	Executive Committee http://www.novartis.com/executive-committee
Novartis Code for Senior Financial Officers	Novartis Code of Ethical Conduct for CEO and Senior Financial Officers http://www.novartis.com/corporate-governance
Additional Information	Novartis Investor Relations http://www.novartis.com/investors

6.D Employees

The table below sets forth the breakdown of the total year-end number of our full time equivalent employees by main category of activity and geographic area for the past three years.

For the year ended December 31, 2013 (full time equivalents)	Research & Development	Production & Supply	Marketing & Sales	General & Administration	Total
USA	8,255	8,600	7,253	2,963	27,071
Canada and Latin America	570	2,943	5,611	1,325	10,449
Europe	11,438	23,449	20,719	7,009	62,615
Asia/Africa/Australasia	3,674	7,331	21,986	2,570	35,561
Total	**23,937**	**42,323**	**55,569**	**13,867**	**135,696**

For the year ended December 31, 2012 (full time equivalents)	Research & Development	Production & Supply	Marketing & Sales	General & Administration	Total
USA	8,056	8,693	7,073	2,882	26,704
Canada and Latin America	554	2,875	5,626	1,254	10,309
Europe	10,994	22,405	19,421	6,608	59,428
Asia/Africa/Australasia	3,569	5,613	19,855	2,246	31,283
Total	**23,173**	**39,586**	**51,975**	**12,990**	**127,724**

For the year ended December 31, 2011 (full time equivalents)	Research & Development	Production & Supply	Marketing & Sales	General & Administration	Total
USA	8,269	7,785	8,930	2,258	27,242
Canada and Latin America	537	2,713	5,541	1,146	9,937
Europe	11,203	20,384	19,532	6,434	57,553
Asia/Africa/Australasia	3,509	4,725	18,551	2,169	28,954
Total	**23,518**	**35,607**	**52,554**	**12,007**	**123,686**

Movements in full time equivalents	2013	2012
Associates as of January 1	**127,724**	**123,686**
Separations	(4,739)	(5,708)
Retirements	(804)	(934)
Resignations	(9,619)	(10,273)
External hirings	23,134	20,269
Impact of major business combinations		684
Total associates as of December 31	**135,696**	**127,724**

A significant number of our associates are represented by unions or works councils. We have not experienced any material work stoppages in recent years, and we consider our employee relations to be good.

6.E Share Ownership

The aggregate amount of our shares owned by current non-executive Directors and the current members of our Executive Committee and Permanent Attendees (including persons closely linked to them) as of December 31, 2013 was 3,423,197 shares.

The aggregate amount of Novartis share and ADR options, including other information regarding the options, held by current non-executive Directors and the current members of our Executive Committee and Permanent Attendees as of December 31, 2013 is set forth below:

Title of Options	Amount of shares called for by the options	Exercise Price[1]	Purchase Price (if any)	Expiration Date	Total number of options held
Novas14 Options	1	57.45	0	February 3, 2014	
Novas15 Options	1	57.45	0	February 3, 2015	
Novas16 Options	1	71.30	0	February 5, 2016	114,597
Novas17 Options	1	72.85	0	February 3, 2017	114,788
Novas18 Options	1	64.05	0	January 10, 2018	280,380
Novas19 Options	1	53.65	0	January 18, 2019	567,435
Novas20 Options	1	55.85	0	January 17, 2020	97,827
Novas21 Options	1	54.70	0	January 19, 2021	141,396
Novas22 Options	1	54.20	0	January 19, 2022	
Novas23 Options	1	61.70	0	January 17, 2023	
Total Novartis Share Options					**1,316,423**
Novartis ADR Options Cycle VIII	1	$46.09	0	February 4, 2014	
Novartis ADR Options Cycle IX	1	$47.84	0	February 4, 2015	
Novartis ADR Options Cycle X	1	$54.70	0	February 5, 2016	
Novartis ADR Options Cycle XI	1	$58.38	0	February 3, 2017	170,933
Novartis ADR Options Cycle XII	1	$57.96	0	January 10, 2018	184,870
Novartis ADR Options Cycle XIII	1	$46.42	0	January 18, 2019	
Novartis ADR Options Cycle XIV	1	$53.70	0	January 17, 2020	
Novartis ADR Options Cycle XV	1	$57.07	0	January 19, 2021	
Novartis ADR Options Cycle XVI	1	$58.33	0	January 19, 2022	50,764
Novartis ADR Options Cycle XVI	1	$66.07	0	January 17, 2023	
Total Novartis ADR Options					**406,567**

[1] Exercise price indicated is per share, and denominated in Swiss francs for share options and US dollars for ADR options.

In addition, one Executive Committee member, Kevin Buehler, owns 605,877 other options, consisting of share settled appreciation rights, resulting from the conversion of Alcon equity into Novartis equity.

For more information on the Novartis shares and share options owned by individual members of our Executive Committee and by our current non-executive Directors, see "—Item 6.B Compensation—Ownership of Novartis Shares and Share Option by Executive Committee Members." and "—Item 6.B Compensation—Ownership of Novartis Shares and Share Option by Non-Executive Directors." For information on our equity-based compensation plans see "—Item 6.B Compensation—Compensation to Novartis Associates."

Item 7. Major Shareholders and Related Party Transactions

7.A Major Shareholders

Novartis shares are widely held. As of December 31, 2013, Novartis had approximately 155,000 shareholders listed in its share register, representing 73% of issued shares. Based on the Novartis AG share register and excluding treasury shares, approximately 41% of the shares registered by name were held in Switzerland and 47% were held in the US. Approximately 12% of the shares registered in the share register were held by individual investors, while 88% were held by legal entities, nominees fiduciaries and the ADS depositary.

Based on our share register, we believe that we are not directly or indirectly owned or controlled by another corporation or government, or by any other natural or legal persons. There are no arrangements that may result in a change of control.

According to the share register, on December 31, 2013, no person or entity was registered as the owner of more than 5% of our shares. As of that date, excluding 4.9% of our share capital held by Novartis AG, together with Novartis affiliates (excluding foundations), as treasury shares, the following registered shareholders (including nominees and the ADS depositary) held more than 2% of the total share capital of Novartis with the right to vote these shares:

- Shareholders: Novartis Foundation for Employee Participation, with its registered office in Basel, Switzerland, holding 3.0%; and Emasan AG, with its registered office in Basel, Switzerland, holding 3.3%;
- Nominees: JPMorgan Chase Bank, New York, NY (holding 11.1%); Nortrust Nominees, London, England (holding 3.2%); and The Bank of New York Mellon, New York, NY (holding 4.6%) through its nominees, Mellon Bank, Everett, MA (holding 2.8%) and The Bank of New York Mellon, Brussels, Belgium (1.8%); and
- ADS depositary: JPMorgan Chase Bank, New York, NY (holding 11.7%).

According to a disclosure notification filed with Novartis AG, Norges Bank (Central Bank of Norway), Oslo, Norway, held 2.03% of the share capital of Novartis AG as of December 31, 2013.

According to disclosure notifications filed with Novartis AG and SIX Swiss Exchange, each of the following shareholders held between 3% and 5% of the share capital of Novartis AG as of December 31, 2013:

- Capital Group Companies, Inc., Los Angeles, CA; and
- BlackRock, Inc., New York, NY

As of December 31, 2013, no other shareholder was registered as owner of more than 2% of the registered share capital. Novartis has not entered into any agreement with any shareholder regarding the voting or holding of Novartis shares.

According to the share register, on December 31, 2012, no person or entity was registered as the owner of more than 5% of our shares. As of that date, excluding 4.09% of our share capital held by Novartis AG, together with Novartis affiliates, as treasury shares, the following registered shareholders (including nominees and the ADS depositary) held more than 2% of the total share capital of Novartis with the right to vote these shares:

- Shareholders: Novartis Foundation for Employee Participation, with its registered office in Basel, Switzerland, holding 4.0%; and Emasan AG, with its registered office in Basel, Switzerland, holding 3.3%;

- Nominees: JPMorgan Chase Bank, New York, NY (holding 11.4%); Nortrust Nominees, London, England (holding 3.3%); and The Bank of New York Mellon, New York, NY (holding 5.0%) through its nominees, Mellon Bank, Everett, MA (holding 3.3%) and The Bank of New York Mellon, Brussels, Belgium (1.7%); and
- ADS depositary: JPMorgan Chase Bank, New York, NY (holding 11.7%).

According to a disclosure notification filed with Novartis AG, Norges Bank (Central Bank of Norway), Oslo, Norway, held 2.3% of the share capital of Novartis AG as of December 31, 2012.

According to disclosure notifications filed with Novartis AG and SIX Swiss Exchange, each of the following shareholders held between 3% and 5% of the share capital of Novartis AG as of December 31, 2012:

- Capital Group Companies, Inc., Los Angeles, CA; and
- BlackRock, Inc., New York, NY

As of December 31, 2012, no other shareholder was registered as owner of more than 2% of the registered share capital. Novartis has not entered into any agreement with any shareholder regarding the voting or holding of Novartis shares.

According to the share register, on December 31, 2011, no person or entity was registered as the owner of more than 5% of our shares. As of that date, excluding 5.76% of our share capital held by Novartis AG, together with Novartis affiliates, as treasury shares, the following shareholders (including nominees and the ADS depositary) held more than 2% of the total share capital of Novartis with the right to vote these shares:

- Shareholders: Novartis Foundation for Employee Participation, with its registered office in Basel, Switzerland, holding 4.1% and Emasan AG, with its registered office in Basel, Switzerland, holding 3.2%;
- Nominees: JPMorgan Chase Bank, New York, NY (holding 10.9%); Nortrust Nominees, London (holding 3.2%); Mellon Bank, Everett, MA (holding 3%); and
- ADS depositary: JPMorgan Chase Bank, New York, NY (holding 11%).

According to disclosure notifications filed with Novartis AG and SIX Swiss Exchange, Capital Group Companies, Inc., Los Angeles, CA held between 3% and 5% of the share capital of Novartis AG as of December 31, 2011.

As of December 31, 2011, no other shareholder was registered as owner of more than 2% of the registered share capital.

7.B Related Party Transactions

See "Item 18. Financial Statements—Note 27".

7.C Interests of Experts and Counsel

Not applicable.

Item 8. Financial Information

8.A Consolidated Statements and Other Financial Information

See "Item 18. Financial Statements."

Dividend policy

Subject to the dividend policy described below, our Board of Directors expects to recommend the payment of a dividend in respect of each financial year. If approved by our shareholders at the relevant annual Shareholders' Meeting, the dividends will be payable shortly following such approval. Any shareholder who purchased our shares on or before the first trading day after the shareholders' meeting and holds the shares through that date shall be deemed to be entitled to receive the dividends approved at that meeting. Dividends are reflected in our financial statements in the year in which they are approved by our shareholders.

Our dividend policy is to pay a growing annual dividend. This policy is subject to our financial conditions and outlook at the time, the results of our operations and other factors.

The Board will propose a dividend of CHF 2.45 per share to the shareholders for approval at the Annual General Meeting to be held on February 25, 2014. Because we pay dividends in Swiss francs, exchange rate fluctuations will affect the US dollar amounts received by holders of ADRs. For a summary of dividends we paid in the past five years, see "Item 3. Key Information—3.A Selected Financial Data—Cash Dividends per Share." See also "Item 3. Key Information—3.D Risk Factors—The price of our ADRs and the US dollar value of any dividends may be negatively affected by fluctuations in the US dollar/Swiss franc exchange rate."

Disclosure pursuant to Section 219 of the Iran Threat Reduction & Syria Human Rights Act (ITRA)

At Novartis, it is our mission to discover, develop and successfully market innovative products to prevent and cure diseases, to ease suffering and to enhance the quality of life of all people, regardless of where they live. As part of that mission, and in connection with the sale of medicines and other healthcare products in Iran, a non-US affiliate within our Pharmaceuticals Division has entered into a non-binding Memorandum of Understanding (MoU) with the Ministry of Health and Medical Education of the Islamic Republic of Iran, dated October 18, 2010. Pursuant to the MoU, the Iranian Ministry of Health acknowledges certain benefits that may apply to sales of certain Novartis Pharmaceuticals medicines by third-party distributors in Iran. These include fast-track registration, market exclusivity, end-user subsidies and exemptions from customs tariffs. Novartis receives no payments from the Iranian Ministry of Health under the MoU and the MoU creates no obligations on the part of either Novartis or the Iranian Ministry of Health.

In 2013, Novartis made payments to government entities in Iran for exit fees and other transactions ordinarily incident to travel by doctors and other medical professionals resident in Iran to attend conferences or other events outside Iran.

From time to time, including in 2013, our non-US affiliates enter into agreements with hospitals and research institutes in Iran to provide grants, sponsor congresses and seminars, and with doctors and other healthcare professionals for consulting services, including participation in advisory boards. Some of these hospitals and research institutes are owned or controlled by the government of Iran, and some of these doctors and healthcare professionals are employed by hospitals that may be public or government-owned.

Because we have operations in Iran, including employees, Novartis obtains services and has other dealings incidental to its activities in that country, including paying taxes and salaries, and obtaining

rentals, electricity, water and telecommunications services, office and similar supplies and customs-related services from Iranian companies who may be owned or controlled by the government of Iran.

Some beneficiaries of payments made by our non-US affiliates in the course of the operations described above maintain accounts at banks that are included on the list of Specially Designated Nationals (SDNs).

To our knowledge, none of our sales of products in Iran during 2013 are required to be disclosed pursuant to ITRA Section 219, with the following possible exception: In 2013, a non-US affiliate of our Vaccines and Diagnostics Division received a payment of EUR 1,294,335 (net of bank fees), and a payment of EUR 185,000, from Medical Equipment and Pharmaceutical Holding Co. of Iran, which we understand is an affiliate of the Iranian Ministry of Health, for a 2012 sale of rabies vaccine, and a 2012 sale of influenza vaccine, respectively, both of which were disclosed in our 2012 Form 20-F.

8.B Significant Changes

None.

Item 9. The Offer and Listing

9.A Offer and Listing Details

Our shares are listed in Switzerland on the SIX Swiss Exchange (SIX).

American Depositary Shares (ADSs), each representing one share, have been available in the US through an American Depositary Receipts (ADR) program since December 1996. This program was established pursuant to a Deposit Agreement which we entered into with JPMorgan Chase Bank N.A. as Depositary (Deposit Agreement). Our ADRs have been listed on the NYSE since May 2000, and are traded under the symbol "NVS."

The table below sets forth, for the periods indicated, the high and low closing sales prices for our shares traded in Switzerland and for ADRs traded in US. The data below regarding our shares reflects price and volume information for trades completed by members of the SIX during the day as well as for inter- dealer trades completed off the SIX and certain inter-dealer trades completed during trading on the previous business day.

The following share data was taken from SIX; the ADR data was taken from Bloomberg:

	Shares		ADRs	
	High CHF per share	Low CHF per share	High $ per ADR	Low $ per ADR
Annual information for the past five years				
2009	56.90	39.64	56.16	33.96
2010	60.25	50.55	59.77	43.78
2011	55.80	39.99	64.52	51.65
2012	59.00	48.80	63.96	51.48
2013	73.65	58.70	80.39	63.70
Quarterly information for the past two years				
2013				
First Quarter	67.45	58.70	71.32	63.70
Second Quarter	73.65	63.25	75.50	68.42
Third Quarter	71.20	66.20	77.08	70.66
Fourth Quarter	72.75	66.60	80.39	72.96
2012				
First Quarter	54.70	49.00	58.33	53.31
Second Quarter	52.90	48.80	56.38	51.48
Third Quarter	58.75	53.35	61.51	55.23
Fourth Quarter	59.00	55.45	63.96	58.97
Monthly information for most recent six months				
August 2013	69.50	67.40	75.42	71.98
September 2013	71.20	69.35	77.08	74.61
October 2013	70.95	66.60	79.16	72.96
November 2013	72.75	70.10	79.71	76.89
December 2013	72.05	67.80	80.39	76.63
January 2014 (through January 22)	74.15	71.65	81.78	78.72

Fluctuations in the exchange rate between the Swiss franc and the US dollar will affect any comparisons of Swiss share prices and US ADR prices.

The average daily volumes traded on the SIX (ON/OFF exchange) for the years 2013, 2012 and 2011 were 4,568,858, 4,637,552, and 7,036,042, respectively. These numbers are based on total annual turnover statistics supplied by the SIX via the Swiss Market Feed, which supplies such data to subscribers and to other information providers. The average daily volumes traded in the US for the years 2013, 2012 and 2011 were 1,440,718, 2,187,889, and 3,492,488, respectively.

The Depositary has informed us that as of January 22, 2014, there were 318,262,489 ADRs outstanding, each representing one Novartis share (approximately 12% of total Novartis shares issued). On January 22, 2014, the closing sales price per share on the SIX was CHF 73.75 and $80.79 per ADR on the NYSE.

9.B Plan of Distribution

Not applicable.

9.C Markets

See "9.A Offer and Listing Details."

9.D Selling Shareholders

Not applicable.

9.E Dilution

Not applicable.

9.F Expenses of the Issue

Not applicable.

Item 10. Additional Information

10.A Share capital

Not applicable.

10.B Memorandum and Articles of Association

The following is a summary of certain provisions of our Articles of Incorporation (Articles), our Regulations of the Board of Directors (Board Regulations) and of Swiss law, particularly, the Swiss Code of Obligations (Swiss CO). This is not a summary of all the significant provisions of the Articles, the Board Regulations or of Swiss law. This summary is qualified in its entirety by reference to the Articles and the Board Regulations, which are an exhibit to this Form 20-F, and to Swiss law.

10.B.1 ***Company Purpose***

Novartis AG is registered in the commercial register of the Canton of Basel-Stadt, Switzerland, under number CH-270.3.002.061-2. Our business purpose, as stated in Article 2 of the Articles, is to hold interests in enterprises in the area of healthcare or nutrition. We may also hold interests in enterprises in the areas of biology, chemistry, physics, information technology or related areas. We may acquire, mortgage, liquidate or sell real estate and intellectual property rights in Switzerland or abroad. In pursuing our business purpose, we strive to create sustainable value.

10.B.2 ***Directors***

(a) According to our Board Regulations, our Directors may not participate in deliberations or resolutions on matters which affect, or reasonably might affect, the Director's interests, or the interests of a person close to the Director. In addition, the Swiss CO sets forth that if, in connection with the conclusion of a contract, the Company is represented by the person with whom it is concluding the contract, such contract shall be in writing. Furthermore, the Swiss CO does require directors and members

of senior management to safeguard the interests of the corporation and, in this connection, imposes a duty of care and a duty of loyalty on such persons. This rule is generally interpreted to mean that directors and members of senior management are disqualified from participating in decisions which affect them personally.

(b) As with any Board resolution, Directors may not vote on their own compensation unless at least a majority of the Directors are present.

(c) The Articles and the Board Regulations contain no specific provision permitting or prohibiting Directors from borrowing from us. The Board of Directors may take decisions on all matters which by law or the Articles are not allocated to the General Meeting of Shareholders.

(d) Directors must retire after the end of their seventieth year of age, but the retirement does not become effective until the date of the next Ordinary General Meeting of Shareholders. The General Meeting of Shareholders may, under special circumstances, grant an exemption from this rule and may elect a Director for further terms of office of no more than three years at a time.

(e) Under the Articles, each of our Directors must also be a shareholder. Ownership of one share is sufficient to satisfy this requirement.

10.B.3 ***Shareholder Rights***

Because we have only one class of registered shares, the following information applies to all shareholders.

(a) The Swiss CO requires that at least 5% of our annual profit be retained as general reserves, so long as these reserves amount to less than 20% of our registered share capital. The law and the Articles permit us to accrue additional reserves.

Under the Swiss CO, we may only pay dividends out of the balance sheet profit, out of reserves created for this purpose or out of free reserves. In either event, under the Swiss CO, while the Board of Directors may propose that a dividend be paid, we may only pay dividends upon shareholders' approval at a General Meeting of Shareholders. Our auditors must confirm that the dividend proposal of our Board of Directors conforms with the Swiss CO and the Articles. Our Board of Directors intends to propose a dividend once each year. See "Item 3. Key Information—3.A. Selected Financial Data—Cash Dividends per Share" and "Item 8. Financial Information—8.A. Consolidated Financial Statements and Other Financial Information—Dividend Policy."

Dividends are usually due and payable shortly after the shareholders have passed a resolution approving the payment. Dividends which have not been claimed within five years after the due date revert to us, and are allocated to our general reserves. For information about deduction of the withholding tax or other duties from dividend payments, see "Item 10. Additional Information—10.E Taxation."

(b) Each share is entitled to one vote at a General Meeting of Shareholders. Voting rights may only be exercised for shares registered with the right to vote on the Record Date. In order to do so, the shareholder must file a share registration form with us, setting forth the shareholder's name, address and citizenship (or, in the case of a legal entity, its registered office). If the shareholder has not timely filed the form, then the shareholder may not vote at, or participate in, General Meetings of Shareholders.

To vote its shares, the shareholder must also explicitly declare that it has acquired the shares in its own name and for its own account. If the shareholder refuses to make such a declaration, the shares may not be voted unless the Board of Directors recognizes such shareholder as nominee. The Board of Directors may grant such nominees the right to vote up to 0.5% of the registered share capital as set forth in the commercial register.

Except as described below, no shareholder may be registered with the right to vote shares composing more than 2% of our registered share capital as set forth in the commercial register. If a shareholder holds

more than 2% of Novartis' shares, that shareholder will be entitled to register the excess shares, but not to cast votes based upon them (registration without the right to vote).

For purposes of the 2% rule for shareholders and the 0.5% rule for nominees, groups of companies and groups of shareholders acting in concert are considered to be one shareholder. The Board of Directors may, upon request, grant exemptions from both the 2% rule for shareholders and the 0.5% rule for nominees. The Board of Directors may delegate this power. Finally, the shareholders may cancel the registration restrictions upon a resolution carrying a two-thirds majority of the vote at a General Meeting of Shareholders.

After hearing the registered shareholder or nominee, the Board of Directors may cancel, with retroactive effect as of the date of registration, the registration of the shareholders if the registration was effected based on false information.

Shareholders' resolutions generally require the approval of a majority of the votes present at a General Meeting of Shareholders. As a result, abstentions have the effect of votes against the resolution. Shareholder resolutions requiring a vote by such "absolute majority" include (1) amendments to the Articles; (2) elections of directors and statutory auditors; (3) approval of the annual report and the annual accounts; (4) setting the annual dividend; (5) decisions to discharge directors and management from liability for matters disclosed to the General Meeting of Shareholders; and (6) the ordering of an independent investigation into specific matters proposed to the General Meeting of Shareholders.

According to the Articles and Swiss law, the following types of shareholders' resolutions require the approval of a "supermajority" of at least two-thirds of the votes present at a General Meeting of Shareholders: (1) an alteration of our corporate purpose; (2) the creation of shares with increased voting powers; (3) an implementation of restrictions on the transfer of registered shares and the removal of such restrictions; (4) an authorized or conditional increase of the share capital; (5) an increase of the share capital by conversion of equity, by contribution in kind, or for the purpose of an acquisition of property or the grant of special rights; (6) a restriction or an elimination of shareholders' preemptive rights; (7) a change of our domicile; (8) our dissolution; or (9) any amendment to the Articles which would create or eliminate a supermajority requirement. Cumulative voting of shares is not permitted under Swiss law.

Beginning with the Annual General Meeting of Shareholders to be held in 2014, our shareholders will annually elect all of the members of the Board of Directors, as well as the Chairman of the Board of Directors, the members of the Compensation Committee and the independent shareholder representative.

At General Meetings of Shareholders, shareholders can be represented by proxy. However, a proxy must either be the shareholder's legal representative, another shareholder with the right to vote, or the independent shareholder representative. Votes are taken either by a show of hands or by electronic voting, unless the General Meeting of Shareholders resolves to have a ballot or where a ballot is ordered by the chairman of the meeting.

American Depositary Shares (ADSs) each representing one Novartis share and evidenced by American Depositary Receipts (ADRs) are issued by our depositary JPMorgan Chase Bank, New York, and not by us. The ADR is vested with rights defined and enumerated in the Deposit Agreement (such as the rights to vote, to receive a dividend and to receive a share of Novartis in exchange for a certain number of ADRs). The enumeration of rights, including any limitations on those rights in the Deposit Agreement, is final. There are no other rights given to the ADR holders. Only the ADS depositary, holding our shares underlying the ADRs, is registered as shareholder in our share register. An ADR is not a Novartis share and an ADR holder is not a Novartis shareholder.

The Deposit Agreement between our depositary, the ADR holder and us has granted certain indirect rights to vote to the ADR holders. ADR holders may not attend Novartis General Meetings in person. ADR holders exercise their voting rights by instructing JPMorgan Chase Bank, our depositary, to exercise

the voting rights attached to the registered shares underlying the ADRs. Each ADR represents one Novartis share. JPMorgan Chase Bank exercises the voting rights for registered shares underlying ADRs for which no voting instructions have been given by providing a discretionary proxy to an uninstructed independent designee pursuant to paragraph 13 of the Deposit Agreement governing ADRs. Such designee has to be a shareholder of Novartis. The same voting restrictions apply to ADR holders as to those holding Novartis shares (i.e. the right to vote up to 2% of the Novartis registered share capital—unless otherwise granted an exemption by the Board—and disclosure requirement for nominees).

(c) Shareholders have the right to allocate the profit shown on our balance sheet by vote taken at the General Meeting of Shareholders, subject to the legal requirements described in "Item 10.B.3(a) Shareholder Rights".

(d) Under the Swiss CO, any surplus arising out of a liquidation of our Company (*i.e.*, after the settlement of all claims of all creditors) would be distributed to the shareholders in proportion to the paid-in nominal value of their shares.

(e) The Swiss CO limits a corporation's ability to hold or repurchase its own shares. We and our subsidiaries may only repurchase shares if we have freely disposable equity, in the amount necessary for this purpose, available. The aggregate nominal value of all Novartis shares held by us and our subsidiaries may not exceed 10% of our registered share capital. However, it is accepted that a corporation may repurchase its own shares beyond the statutory limit of 10%, if the repurchased shares are clearly dedicated for cancellation and if the shareholders passed a respective resolution at a General Meeting of Shareholders. In addition, we are required to create a special reserve on our balance sheet in the amount of the purchase price of the acquired shares. Repurchased shares held by us or our subsidiaries do not carry any rights to vote at a General Meeting of Shareholders, but are entitled to the economic benefits generally connected with the shares. It should be noted that the definition of what constitutes subsidiaries, and therefore, treasury shares, for purposes of the above described reserves requirement and voting restrictions differs from the definition included in the consolidated financial statements. The definition in the consolidated financial statements requires consolidation for financial reporting purposes of special purpose entities, irrespective of their legal structure, in instances where we have the power to govern the financial and operating policies of the entity so as to obtain benefits from its activities.

Under the Swiss CO, we may not cancel treasury shares without the approval of a capital reduction by our shareholders.

(f) Not applicable.

(g) Since all of our issued and outstanding shares have been fully paid in, we can make no further capital calls on our shareholders.

(h) See Items "10.B.3(b) Shareholder Rights" and "10.B.7 Change in Control".

10.B.4 ***Changes To Shareholder Rights***

Under the Swiss CO, we may not issue new shares without the prior approval of a capital increase by our shareholders. If a capital increase is approved, then our shareholders would generally have certain preemptive rights to obtain newly issued shares in an amount proportional to the nominal value of the shares they already hold. These preemptive rights could be modified in certain limited circumstances with the approval of a resolution adopted at a General Meeting of Shareholders by a supermajority of votes. In addition, we may not create shares with increased voting powers or place restrictions on the transfer of registered shares without the approval of a resolution adopted at a General Meeting of Shareholders by a supermajority of votes. In addition, see Item 10.B.3(b) with regard to the Board of Directors' ability to cancel the registration of shares under limited circumstances.

10.B.5 ***Shareholder Meetings***

Under the Swiss CO and the Articles, we must hold an annual ordinary General Meeting of Shareholders within six months after the end of our financial year. General Meetings of Shareholders may be convened by the Board of Directors or, if necessary, by the statutory auditors. The Board of Directors is further required to convene an extraordinary General Meeting of Shareholders if so resolved by a General Meeting of Shareholders, or if so requested by shareholders holding an aggregate of at least 10% of the registered shares, specifying the items for the agenda and their proposals. Shareholders holding shares with a nominal value of at least CHF 1,000,000 (*i.e.*, 2,000,000 Novartis shares) have the right to request that a specific proposal be put on the agenda and voted upon at the next General Meeting of Shareholders. A General Meeting of Shareholders is convened by publishing a notice in the official Swiss Commercial Gazette (*Schweizerisches Handelsamtsblatt*) at least 20 days prior to such meeting. Shareholders may also be informed by mail. There is no provision in the Swiss CO or our Articles requiring a quorum for the holding of a General Meeting of Shareholders. In addition see "Item 10.B.3(b) Shareholder Rights" regarding conditions for exercising a shareholder's right to vote at a General Meeting of Shareholders.

10.B.6 ***Limitations***

There are no limitations under the Swiss CO or our Articles on the right of non-Swiss residents or nationals to own or vote shares other than the restrictions applicable to all shareholders. But see "Item 10.B.3(b) Shareholder Rights" regarding conditions for exercising an ADR holder's right to vote at a shareholder meeting.

10.B.7 ***Change in Control***

The Articles and the Board Regulations contain no provision that would have an effect of delaying, deferring or preventing a change in control of Novartis and that would operate only with respect to a merger, acquisition or corporate restructuring involving us or any of our subsidiaries.

According to the Swiss Merger Act, shareholders may pass a resolution to merge with another corporation at any time. Such a resolution would require the consent of at least two-thirds of all votes present at the necessary General Meeting of Shareholders.

Under the Swiss Stock Exchange Act, shareholders and groups of shareholders acting in concert who acquire more than 33⅓% of our shares would be under an obligation to make an offer to acquire all remaining Novartis shares.

10.B.8 ***Disclosure of Shareholdings***

Under the Swiss Stock Exchange Act, holders of our voting shares acting alone or acting in concert with others are required to notify us and the SIX Swiss Exchange of the level of their holdings whenever such holdings reach or exceed, or in some cases, fall short of, certain thresholds—3%, 5%, 10%, 15%, 20%, 25%, 33⅓%, 50% and 66⅔%—of our registered share capital. Following receipt of such notification we are required to inform the public by publishing the information via the electronic publication platform operated by the competent Disclosure Office.

An additional disclosure obligation exists under the Swiss CO which requires us to disclose, once a year in the notes to the financial statements published in our annual report, the identity of all of our shareholders (or related groups of shareholders) who have been granted exemption entitling them to vote more than 2% of our registered share capital, as described in "Item 10.B.3(b) Shareholder Rights".

10.B.9 ***Differences in the Law***

See the references to Swiss law throughout this "Item 10.B Memorandum and Articles of Association".

10.B.10 ***Changes in Capital***

The requirements of the Articles regarding changes in capital are not more stringent than the requirements of Swiss law.

10.C Material contracts

Not applicable.

10.D Exchange controls

There are no Swiss governmental laws, decrees or regulations that restrict, in a manner material to Novartis, the export or import of capital, including any foreign exchange controls, or that generally affect the remittance of dividends or other payments to non-residents or non-citizens of Switzerland who hold Novartis' shares.

10.E Taxation

The taxation discussion set forth below is intended only as a descriptive summary and does not purport to be a complete analysis or listing of all potential tax effects relevant to the ownership or disposition of our shares or ADRs. The statements of US and Swiss tax laws set forth below are based on the laws and regulations in force as of the date of this 20-F, including the current Convention Between the US and the Swiss Confederation for the Avoidance of Double Taxation with Respect to Taxes on Income, entered into force on December 19, 1997 (the "Treaty"), and the US Internal Revenue Code of 1986, as amended (the "Code"), Treasury regulations, rulings, judicial decisions and administrative pronouncements, and may be subject to any changes in US and Swiss law, and in any double taxation convention or treaty between the US and Switzerland occurring after that date, which changes may have retroactive effect.

Swiss Taxation

Swiss Residents

Withholding Tax on Dividends and Distributions. Dividends which we pay and similar cash or in-kind distributions which we may make to a holder of shares or ADRs (including distributions of liquidation proceeds in excess of the nominal value, stock dividends and, under certain circumstances, proceeds from repurchases of shares by us in excess of the nominal value) are generally subject to a Swiss federal withholding tax (the "Withholding Tax") at a current rate of 35%. Under certain circumstances distributions out of capital contribution reserves made by shareholders after December 31, 1996 are exempt from Withholding Tax. We are required to withhold this Withholding Tax from the gross distribution and to pay the Withholding Tax to the Swiss Federal Tax Administration. The Withholding Tax is refundable in full to Swiss residents who are the beneficial owners of the taxable distribution at the time it is resolved and duly report the gross distribution received on their personal tax return or in their financial statements for tax purposes, as the case may be.

Income Tax on Dividends. A Swiss resident who receives dividends and similar distributions (including stock dividends and liquidation surplus) on shares or ADRs is required to include such amounts in the shareholder's personal income tax return. However, distributions out of qualified capital

contribution reserves are not subject to income tax. A corporate shareholder may claim substantial relief from taxation of dividends and similar distributions received if the shares held represent a fair market value of at least CHF 1 million.

Capital Gains Tax upon Disposal of Shares. Under current Swiss tax law, the gain realized on shares held by a Swiss resident who holds shares or ADRs as part of his private property is generally not subject to any federal, cantonal or municipal income taxation on gains realized on the sale or other disposal of shares or ADRs. However, gains realized upon a repurchase of shares by us may be characterized as taxable dividend income if certain conditions are met. Book gains realized on shares or ADRs held by a Swiss corporate entity or by a Swiss resident individual as part of the shareholder's business property are, in general, included in the taxable income of such person. However, the Federal Law on the Direct Federal Tax of December 14, 1990 and several cantonal laws on direct cantonal taxes provide for exceptions for Swiss corporate entities holding more than 10% of our voting stock for more than one year.

Residents of Other Countries

Recipients of dividends and similar distributions on the shares who are neither residents of Switzerland for tax purposes nor holding shares as part of a business conducted through a permanent establishment situated in Switzerland ("Non-resident Holders") are not subject to Swiss income taxes in respect of such distributions. Moreover, gains realized by such recipients upon the disposal of shares are not subject to Swiss income taxes.

Non-resident Holders of shares are, however, subject to the Withholding Tax on dividends and similar distributions mentioned above and under certain circumstances to the Stamp Duty described below. Such Non-resident Holders may be entitled to a partial refund of the Withholding Tax if the country in which they reside has entered into a bilateral treaty for the avoidance of double taxation with Switzerland. Non-resident Holders should be aware that the procedures for claiming treaty refunds (and the time frame required for obtaining a refund) may differ from country to country. Non-resident Holders should consult their own tax advisors regarding receipt, ownership, purchase, sale or other dispositions of shares or ADRs and the procedures for claiming a refund of the Withholding Tax.

As of January 1, 2014, Switzerland has entered into bilateral treaties for the avoidance of double taxation with respect to income taxes with the following countries, whereby a part of the above-mentioned Withholding Tax may be refunded (subject to the limitations set forth in such treaties):

Albania	France	Latvia	Singapore
Algeria	Germany	Lithuania	Slovak Republic
Armenia	Georgia	Luxembourg	Slovenia
Australia	Ghana	Macedonia	South Africa
Austria	Greece	Malaysia	Spain
Azerbaijan	Hong Kong	Malta	Sri Lanka
Bahrain	Hungary	Mexico	Sweden
Bangladesh	Iceland	Moldova	Taiwan
Belarus	India	Mongolia	Tajikistan
Belgium	Indonesia	Montenegro	Thailand
Bulgaria	Iran	Morocco	Trinidad and Tobago
Canada	Israel	Netherlands	Tunisia
Chile	Italy	New Zealand	Turkey
China	Ivory Coast	Norway	Ukraine
Colombia	Republic of Ireland	Pakistan	United Arab Emirates
Croatia	Jamaica	Philippines	United Kingdom
Czech Republic	Japan	Poland	United States of America
Denmark	Kazakhstan	Portugal	Uruguay
Ecuador	Republic of Korea	Quatar	Uzbekistan
Egypt	(South Korea)	Romania	Venezuela
Estonia	Kuwait	Russia	Vietnam
Finland	Kyrgyzstan	Serbia	

The tax treaty with Bahrain is not applicable to the healthcare industry. Tax treaty negotiations are under way, or have been concluded, with Argentina (treaty not yet in force but provisionally applicable as from January 1, 2001), Brazil, Costa Rica, Libya, North Korea, Oman, Peru, Saudi Arabia, Senegal, Syria, Turkmenistan, and Zimbabwe.

A Non-resident Holder of shares or ADRs will not be liable for any Swiss taxes other than the Withholding Tax described above and, if the transfer occurs through or with a Swiss bank or other Swiss securities dealer, the Stamp Duty described below. If, however, the shares or ADRs of Non-resident Holders can be attributed to a permanent establishment or a fixed place of business maintained by such person within Switzerland during the relevant tax year, the shares or ADRs may be subject to Swiss income taxes in respect of income and gains realized on the shares or ADRs and such person may qualify for a full refund of the Withholding Tax based on Swiss tax law.

Residents of the US. A Non-resident Holder who is a resident of the US for purposes of the Treaty is eligible for a reduced rate of tax on dividends equal to 15% of the dividend, provided that such holder (i) qualifies for benefits under the Treaty, (ii) holds, directly and indirectly, less than 10% of our voting stock, and (iii) does not conduct business through a permanent establishment or fixed base in Switzerland to which the shares or ADRs are attributable. Such an eligible holder must apply for a refund of the amount of the Withholding Tax in excess of the 15% Treaty rate. A Non-resident Holder who is a resident of the US for purposes of the Treaty is eligible for a reduced rate of tax on dividends equal to 5% of the dividend, provided that such holder (i) is a company, (ii) qualifies for benefits under the Treaty, (iii) holds directly at least 10% of our voting stock, and (iv) does not conduct business through a permanent establishment or fixed place of business in Switzerland to which the shares or ADRs are attributable. Such an eligible holder must apply for a refund of the amount of the Withholding Tax in excess of the 5% Treaty rate. Claims for refunds must be filed on Swiss Tax Form 82 (82C for corporations; 82I for individuals; 82E

for other entities), which may be obtained from any Swiss Consulate General in the US or from the Federal Tax Administration of Switzerland at the address below, together with an instruction form. Four copies of the form must be duly completed, signed before a notary public of the US, and sent to the Federal Tax Administration of Switzerland, Eigerstrasse 65, CH-3003 Berne, Switzerland. The form must be accompanied by suitable evidence of deduction of Swiss tax withheld at source, such as certificates of deduction, signed bank vouchers or credit slips. The form may be filed on or after July 1 or January 1 following the date the dividend was payable, but no later than December 31 of the third year following the calendar year in which the dividend became payable. For US resident holders of ADRs, JPMorgan Chase Bank, N.A., as Depositary, will comply with these Swiss procedures on behalf of the holders, and will remit the net amount to the holders.

Stamp Duty upon Transfer of Securities. The sale of shares, whether by Swiss residents or Non-resident Holders, may be subject to federal securities transfer Stamp Duty of 0.15%, calculated on the sale proceeds, if the sale occurs through or with a Swiss bank or other Swiss securities dealer, as defined in the Swiss Federal Stamp Duty Act. The Stamp Duty has to be paid by the securities dealer and may be charged to the parties in a taxable transaction who are not securities dealers. Stamp Duty may also be due if a sale of shares occurs with or through a non-Swiss bank or securities dealer, provided (i) such bank or dealer is a member of the SIX, and (ii) the sale takes place on the SIX. In addition to this Stamp Duty, the sale of shares by or through a member of the SIX may be subject to a minor stock exchange levy.

US Federal Income Taxation

The following is a general discussion of the material US federal income tax consequences of the ownership and disposition of our shares or ADRs that may be relevant to you if you are a US Holder (as defined below). Because this discussion does not consider any specific circumstances of any particular holder of our shares or ADRs, persons who are subject to US taxation are strongly urged to consult their own tax advisers as to the overall US federal, state and local tax consequences, as well as to the overall Swiss and other foreign tax consequences, of the ownership and disposition of our shares or ADRs. In particular, additional or different rules may apply to US expatriates, banks and other financial institutions, regulated investment companies, traders in securities who elect to apply a mark-to-market method of accounting, dealers in securities or currencies, tax-exempt entities, insurance companies, broker-dealers, investors liable for alternative minimum tax, investors that hold shares or ADRs as part of a straddle, hedging or conversion transaction, holders whose functional currency is not the US dollar, partnerships or other pass through entities, persons who acquired our shares pursuant to the exercise of employee stock options or otherwise as compensation and persons who hold directly, indirectly or by attribution, 10% or more of the voting power of our outstanding shares. This discussion generally applies only to US Holders who hold the shares or ADRs as a capital asset (generally, for investment purposes), and whose functional currency is the US dollar. Investors are urged to consult their own tax advisors concerning whether they are eligible for benefits under the Treaty.

For purposes of this discussion, a "US Holder" is a beneficial owner of our shares or ADRs who is (i) an individual who is a citizen or resident of the US for US federal income tax purposes, (ii) a corporation (or other entity taxable as a corporation for US federal income tax purposes) created or organized in or under the laws of the US or a state thereof or the District of Columbia, (iii) an estate the income of which is subject to US federal income taxation regardless of its source, or (iv) a trust (i) subject to the primary supervision of a US court and the control of one or more US persons or (ii) that has a valid election in place to be treated as a US person. If a partnership (or other entity treated as a partnership for US federal income tax purposes) holds shares or ADRs, the tax treatment of a partner generally will depend upon the status of the partner and the activities of the partnership. Partners in a partnership that holds shares or ADRs are urged to consult their own tax advisor regarding the specific tax consequences of the owning and disposing of such shares or ADRs by the partnership.

For US federal income tax purposes, a US Holder of ADRs generally will be treated as the beneficial owner of our shares represented by the ADRs. However, see the discussion below under "—Dividends" regarding certain statements made by the US Treasury concerning depositary arrangements.

This discussion assumes that each obligation in the Deposit Agreement and any related agreement will be performed in accordance with its terms.

Dividends. US Holders will be required to include in gross income, as an item of ordinary income, the full amount (including the amount of any Withholding Tax) of a dividend paid with respect to our shares or ADRs at the time that such dividend is received by the US Holder, in the case of shares, or by the Depository, in the case of ADRs. For this purpose, a "dividend" will include any distribution paid by us with respect to our shares or ADRs (other than certain pro rata distributions of our capital stock) paid out of our current or accumulated earnings and profits, as determined under US federal income tax principles. To the extent the amount of a distribution by us exceeds our current and accumulated earnings and profits, such excess will first be treated as a tax-free return of capital to the extent of a US Holder's tax basis in the shares or ADRs (with a corresponding reduction in such tax basis), and thereafter will be treated as capital gain, which will be long-term capital gain if the US Holder held our shares or ADRs for more than one year. Under the Code, dividend payments by us on the shares or ADRs are not eligible for the dividends received deduction generally allowed to corporate shareholders.

Dividend income in respect of our shares or ADRs will constitute income from sources outside the US for US foreign tax credit purposes. Subject to the limitations and conditions provided in the Code, US Holders generally may claim as a credit against their US federal income tax liability, any Withholding Tax withheld from a dividend. The rules governing the foreign tax credit are complex. Each US Holder is urged to consult its own tax advisor concerning whether, and to what extent, a foreign tax credit will be available with respect to dividends received from us. Alternatively, a US Holder may claim the Withholding Tax as a deduction for the taxable year within which the Withholding Tax is paid or accrued, provided a deduction is claimed for all of the foreign income taxes the US Holder pays or accrues in the particular year. A deduction does not reduce US tax on a dollar-for-dollar basis like a tax credit. The deduction, however, is not subject to the limitations applicable to foreign tax credits.

The US Treasury has expressed concern that parties to whom ADRs are released may be taking actions inconsistent with the claiming of foreign tax credits for US Holders of ADRs. Accordingly, the summary above of the creditability of the Withholding Tax could be affected by future actions that may be taken by the US Treasury.

In general, a US Holder will be required to determine the amount of any dividend paid in Swiss francs, including the amount of any Withholding Tax imposed thereon, by translating the Swiss francs into US dollars at the spot rate on the date the dividend is actually or constructively received by a US Holder, in the case of shares, or by the Depositary, in the case of ADRs, regardless of whether the Swiss francs are in fact converted into US dollars. If a US Holder converts the Swiss francs so received into US dollars on the date of receipt, the US Holder generally should not recognize foreign currency gain or loss on such conversion. If a US Holder does not convert the Swiss francs so received into US dollars on the date of receipt, the US Holder will have a tax basis in the Swiss francs equal to the US dollar value on such date. Any foreign currency gain or loss that a US Holder recognizes on a subsequent conversion or other disposition of the Swiss francs generally will be treated as US source ordinary income or loss.

For a non-corporate US Holder, the US dollar amount of any dividends paid to it prior to January 1, 2013 that constitute qualified dividend income generally will be taxable at a maximum rate of 15%. For tax years beginning after 2012, the top rate is 20% for taxpayers with incomes exceeding $400,000 ($450,000 for joint filing taxpayers) provided that the US Holder meets certain holding period and other requirements. In addition, the dividends could be subject to a 3.8% net investment income tax. This tax is applied against the lesser of the US Holder's net investment income or modified adjusted gross income over $200,000 ($250,000 for joint filing taxpayers). We currently believe that dividends paid with respect to

our shares and ADRs will constitute qualified dividend income for US federal income tax purposes. However, the US Treasury and the US Internal Revenue Service ("IRS") have announced their intention to promulgate rules pursuant to which US Holders of shares and ADRs, among others, will be permitted to rely on certifications from issuers to establish that dividends are treated as qualified dividends. US Holders of shares or ADRs are urged to consult their own tax advisors regarding the availability to them of the reduced dividend rate in light of their own particular situation and the computations of their foreign tax credit limitation with respect to any qualified dividends paid to them, as applicable.

Sale or Other Taxable Disposition. Upon a sale or other taxable disposition of shares or ADRs, US Holders generally will recognize capital gain or loss in an amount equal to the difference between the US dollar value of the amount realized on the disposition and the US Holder's tax basis (determined in US dollars) in the shares or ADRs. This capital gain or loss generally will be US source gain or loss and will be treated as long-term capital gain or loss if the holding period in the shares or ADRs exceeds one year. In the case of certain US Holders (including individuals), any long term capital gain generally will be subject to US federal income tax at preferential rates, which rates are subject to a maximum of 20% for taxpayers with incomes exceeding $400,000 ($450,000 for joint filing taxpayers) for gains recognized after January 1, 2013. In addition, the gains could be subject to a 3.8% investment income tax. This tax is applied against the lesser of the US Holder's net investment income or modified adjusted gross income over $200,000 ($250,000 for joint filing taxpayers). The deductibility of capital losses is subject to significant limitations under the Code. Deposits or withdrawals of our shares by US Holders in exchanges for ADRs will not result in the realization of gain or loss for US federal income tax purposes.

US Information Reporting and Backup Withholding. Dividend payments with respect to shares or ADRs and proceeds from the sale, exchange or other disposition of shares or ADRs received in the United States or through US-related financial intermediaries, may be subject to information reporting to the IRS and possible US backup withholding. Certain exempt recipients (such as corporations) are not subject to these information reporting and backup withholding requirements. Backup withholding will not apply to a US Holder who furnishes a correct taxpayer identification number and makes any other required certification or who is otherwise exempt from backup withholding. Any US Holders required to establish their exempt status generally must provide a properly- executed IRS Form W-9 (Request for Taxpayer Identification Number and Certification). Backup withholding is not an additional tax. Amounts withheld as backup withholding may be credited against a US Holder's US federal income tax liability, and a US Holder may obtain a refund of any excess amounts withheld under the backup withholding rules by timely filing the appropriate claim for refund with the IRS and furnishing any required information.

10.F Dividends and paying agents

Not applicable.

10.G Statement by experts

Not applicable.

10.H Documents on display

Any statement in this Form 20-F about any of our contracts or other documents is not necessarily complete. If the contract or document is filed as an exhibit to the Form 20-F the contract or document is deemed to modify the description contained in this Form 20-F. You must review the exhibits themselves for a complete description of the contract or document.

You may review a copy of our filings with the SEC, as well as other information furnished to the SEC, including exhibits and schedules filed with it, at the SEC's public reference room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information. In

addition, the SEC maintains an Internet site at http://www.sec.gov that contains reports and other information regarding issuers that file electronically with the SEC. These SEC filings are also available to the public from commercial document retrieval services.

We are required to file or furnish reports and other information with the SEC under the Securities Exchange Act of 1934 and regulations under that act. As a foreign private issuer, we are exempt from the rules under the Exchange Act prescribing the form and content of proxy statements and our officers, directors and principal shareholders are exempt from the reporting and short swing profit recovery provisions contained in Section 16 of the Exchange Act.

10.I Subsidiary Information

Not applicable.

Item 11. Quantitative and Qualitative Disclosures about Market Risk

The major financial risks facing the Group are managed centrally by Group Treasury. We have a written Treasury Policy and have implemented a strict segregation of front office and back office controls. The Group does regular reconciliations of its positions with its counterparties. In addition the Treasury function is included in management's internal control assessment.

For information about the effects of currency fluctuations and how we manage currency risk, see "Item 5. Operating and Financial Review and Prospects—Item 5.A Operating Results—Effects of Currency Fluctuations", "Item 5.A Operating Results—Currency Impact on Key Figures" and "Item 5.B Liquidity and Capital Resources".

For further information, see "Item 18. Financial Statements—Note 29".

Item 12. Description of Securities Other than Equity Securities

12.A Debt Securities

Not applicable.

12.B Warrants and Rights

Not applicable.

12.C Other Securities

Not applicable.

12.D American Depositary Shares

Fees Payable By ADR Holders

According to our Deposit Agreement with the ADS depositary, JPMorgan Chase Bank (JPMorgan), holders of our ADRs may have to pay to JPMorgan, either directly or indirectly, fees or charges up to the amounts set forth below:

Category	Depositary actions	Associated Fee
Depositing or substituting underlying shares	Acceptance of shares surrendered, and issuance of ADRs in exchange, including surrenders and issuances in respect of: —Share distributions —Stock split —Rights —Merger —Exchange of shares or any other transaction or event or other distribution affecting the ADSs or the deposited shares	$5.00 for each 100 ADSs (or portion thereof) evidenced by the new ADRs delivered
Withdrawing underlying shares	Acceptance of ADRs surrendered for withdrawal of deposited shares	$5.00 for each 100 ADSs (or portion thereof) evidenced by the ADRs surrendered
Selling or exercising rights	Distribution or sale of shares, the fee being in an amount equal to the fee for the execution and delivery of ADRs which would have been charged as a result of the deposit of such shares	$5.00 for each 100 ADSs (or portion thereof)
Transferring, splitting or grouping receipts	Transfers, combining or grouping of depositary receipts	$2.50 per ADR
Expenses of the depositary	Expenses incurred on behalf of holders in connection with —compliance with foreign exchange control regulations or any law or regulation relating to foreign investment —the depositary's or its custodian's compliance with applicable law, rule or regulation. —stock transfer or other taxes and other governmental charges —cable, telex and facsimile transmission and delivery —expenses of the depositary in connection with the conversion of foreign currency into US dollars (which are paid out of such foreign currency) —any other charge payable by any of the depositary or its agents	Expenses payable at the sole discretion of the Depositary by billing Holders or by deducting charges from one or more cash dividends or other cash distributions.
Advance tax relief	Tax relief/reclamation process for qualified holders.	A depositary service charge of $0.0035 per ADS

Fees Payable By The Depositary To The Issuer

Pursuant to an agreement effective as of May 11, 2012, JPMorgan, as depositary, has agreed to reimburse Novartis $1.0 million per quarter, a total of $4.0 million per contract year, for expenses incurred directly related to our ADR program (the "Program") which were incurred during the contract year, including Program-related legal fees, expenses related to investor relations in the US, US investor presentations, ADR-related financial advertising and public relations, fees and expenses of JPMorgan as administrator of the ADR Direct Plan, reasonable accountants' fees in relation to our Form 20-F, maintenance and broker reimbursement expenses. Because our expenses related to these categories exceed $4.0 million (see, for example, the amount of our accountants' fees set forth at "Item 16C. Principal Accountant Fees and Services—Auditing and Additional Fees"), the $4.0 million cannot be deemed to have reimbursed us for any particular one or more of these expenses.

JPMorgan has further agreed not to seek reimbursement of up to $50,000 of out-of-pocket expenses incurred annually in providing such administrative services.

PART II

Item 13. Defaults, Dividend Arrearages and Delinquencies

None.

Item 14. Material Modifications to the Rights of Security Holders and Use of Proceeds

None.

Item 15. Controls and Procedures

(a) Novartis AG's chief executive officer and chief financial officer, after evaluating the effectiveness of our disclosure controls and procedures (as defined in Exchange Act Rule 13a-15(e)) as of the end of the period covered by this Form 20-F, have concluded that, as of such date, our disclosure controls and procedures were effective.

(b) Report of Novartis Management on Internal Control Over Financial Reporting: Novartis' Board of Directors and management of the Group are responsible for establishing and maintaining adequate internal control over financial reporting. The Group's internal control system was designed to provide reasonable assurance to the Group's management and Board of Directors regarding the reliability of financial reporting and the preparation and fair presentation of its published consolidated financial statements.

All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective may not prevent or detect misstatements and can provide only reasonable assurance with respect to financial statement preparation and presentation. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Group management assessed the effectiveness of the Group's internal control over financial reporting as of December 31, 2013. In making this assessment, it used the criteria established in *Internal Control—Integrated Framework (1992)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on our assessment management concluded that, as of December 31, 2013, Group's internal control over financial reporting is effective based on those criteria.

PricewaterhouseCoopers AG, Switzerland (PwC), an independent registered public accounting firm, has issued an opinion on the effectiveness of the Group's internal control over financial reporting which is included under "Item 18. Financial Statements" on page F-2.

(c) See the report of PwC, an independent registered public accounting firm, included under "Item 18. Financial Statements" on page F-2.

(d) There were no changes to our internal control over financial reporting that occurred during the period covered by this Form 20-F that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 16A. Audit Committee Financial Expert

Our Audit and Compliance Committee has determined that Srikant Datar and Ulrich Lehner each possess specific accounting and financial management expertise and that each is an Audit Committee Financial Expert as defined by the US Securities and Exchange Commission (SEC). The Board of Directors has also determined that other members of the Audit and Compliance Committee have

sufficient experience and ability in finance and compliance matters to enable them to adequately discharge their responsibilities.

Item 16B. Code of Ethics

In addition to our Code of Conduct, which is applicable to all of our associates, we have adopted a Code of Ethical Conduct that imposes additional obligations on our principal executive officer, principal financial officer, principal accounting officer, and persons performing similar functions. This document is accessible on our Internet website at

http://www.novartis.com/investors/corporate-governance.shtml

Item 16C. Principal Accountant Fees and Services

Refer to "Item 6. Directors, Senior Management and Employees—Item 6.C Board Practices—Our Independent External Auditors."

Item 16D. Exemptions from the Listing Standards for Audit Committees

Not Applicable.

Item 16E. Purchases of Equity Securities by the Issuer and Affiliated Purchaser

2013	Total Number of Shares Purchased (a)[1]	Average Price Paid per Share in $ (b)	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (c)[2]	Maximum Approximate Value of Shares that may yet be purchased under the Plans or Programs in CHF (d) (CHF millions)	Maximum Approximate Value of Shares that may yet be purchased under the Plans or Programs in $ ($ millions)[3]
Jan. 1-31	1,746,318	65.93		7,621	8,359
Feb. 1-28	1,255,877	67.95		7,621	8,199
Mar. 1-31	4,363,172	69.46		7,621	7,998
Apr. 1-30	1,356,509	73.32		7,621	8,129
May 1-31	4,511,712	74.04		7,621	7,987
Jun. 1-30	3,874,046	71.23		7,621	8,051
Jul. 1-31	2,520,668	72.04		7,621	8,198
Aug. 1-31	5,468,579	73.75		7,621	8,181
Sep. 1-30	5,466,623	75.79		7,621	8,408
Oct. 1-31	891,279	77.20		7,621	8,456
Nov. 1-30	2,910,806	79.21	675,000	7,573	8,360
Dec. 1-31	5,988,685	78.24	1,485,000	7,469	8,392
Total	**40,354,274**	**73.85**	**2,160,000**		

(1) Column (a) shows shares we purchased as part of our sixth share repurchase program plus the following types of share purchases outside of our publicly announced repurchase program: (1) shares which we purchased on the open market; and

(2) shares which we purchased from Swiss employees who had obtained the shares through a Novartis Employee Ownership Plan. See "Item 6. Directors, Senior Management and Employees—6.B Compensation—Compensation for Novartis Associates."

(2) Column (c) shows shares purchased as part of our sixth share repurchase program which was approved by the shareholders February 26, 2008 for an amount of up to CHF 10.0 billion. See "Item 5. Operating and Financial Review and Prospects—5.B Liquidity and Capital Resources—Share Repurchase Program."

(3) Column (e) shows the Swiss franc amount from column (d) converted into US dollars as of the month-end, using the Swiss franc/US dollar exchange rate at the applicable month-end.

Item 16F. Change in Registrant's Certifying Accountant

Not applicable.

Item 16G. Corporate Governance

Refer to "Item 6. Directors, Senior Management and Employees—Item 6.C Board Practices—Our Corporate Governance Framework."

Item 16H. Mine Safety Disclosure

Not applicable.

PART III

Item 17. Financial Statements

See "Item 18. Financial Statements."

Item 18. Financial Statements

The following financial statements are filed as part of this annual report on Form 20-F.

Item 19. Exhibits

1.1	Articles of Incorporation, as amended February 23, 2012 (English translation) (incorporated by reference to Exhibit 1.1 to the Form 20-F for the year ended December 31, 2012 as filed with the SEC on January 23, 2013).
1.2	Regulations of the Board and Committee Charters of Novartis AG, amended as of January 1, 2014.
2.1	Restricted Issuance Agreement dated as of January 11, 2002 among Novartis AG, J.P. Morgan Chase & Co., as depositary, and all holders from time to time of ADRs representing ADSs issued thereunder (incorporated by reference to Exhibit 4 to the Registration Statement on Form F-3, File No. 333-81862, as filed with the SEC on January 31, 2002).
2.2	Letter Agreement dated October 27, 2004 between Novartis AG and JPMorgan Chase Bank, as depositary (incorporated by reference to Exhibit 2.2 to the Form 20-F for the year ended December 31, 2004 as filed with the SEC on January 28, 2005).
2.3	Letter Agreement dated September 12, 2005 between Novartis AG and JPMorgan Chase Bank, as depositary (incorporated by reference to Exhibit 2.3 to the Form 20-F for the year ended December 31, 2005 as filed with the SEC on January 30, 2006).
2.4	Letter Agreement dated December 14, 2007 between Novartis AG and JPMorgan Chase Bank, as depositary (incorporated by reference to Exhibit 2.4 to the Form 20-F for the year ended December 31, 2007 as filed with the SEC on January 28, 2008).
6.1	For earnings per share calculation, see "Item 18. Financial Statements—Note 7."
8.1	For a list of all of our principal Group subsidiaries and associated companies, see "Item 18. Financial Statements—Note 32."
12.1	Certification of Joseph Jimenez, Chief Executive Officer of Novartis AG, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
12.2	Certification of Harry Kirsch, Chief Financial Officer of Novartis AG, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
13.1	Certification of Joseph Jimenez, Chief Executive Officer of Novartis AG, pursuant to Section 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
13.2	Certification of Harry Kirsch, Chief Financial Officer of Novartis AG, pursuant to Section 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes Oxley Act of 2002.
14.1	Consent of PricewaterhouseCoopers AG to the incorporation by reference of the audit report contained in this Form 20-F into Novartis AG's Registration Statement on Form S-8 filed on October 1, 2004 (File No. 333-119475), on Form S-8 filed on September 5, 2006 (File No. 333-137112), on Form S-8 filed on October 29, 2009 (File No. 333-162727), on Form S-8 filed on January 18, 2011 (File No. 333-171739), on Form S-8 filed on April 8, 2011 (File No. 333-173382) and on Form F-3 filed on September 21, 2012 (File No. 333-183955).

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

NOVARTIS AG

By: /s/ HARRY KIRSCH

Name: Harry Kirsch
Title: *Chief Financial Officer, Novartis Group*

By: /s/ FELIX R. EHRAT

Name: Felix R. Ehrat
Title: *General Counsel, Novartis Group*

Date: January 29, 2014

NOVARTIS GROUP

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Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of Novartis AG, Basel

In our opinion, the accompanying consolidated balance sheets and the related consolidated income statements, consolidated statements of comprehensive income, consolidated statements of changes in equity, consolidated cash flow statements and notes (pages F-4 through F-117 in this Form 20-F) present fairly, in all material respects, the financial position of Novartis AG and its consolidated subsidiaries (Group or Company) at December 31, 2013 and December 31, 2012, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2013 in conformity with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2013, based on criteria established in *Internal Control—Integrated Framework (1992)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

The Novartis' Board of Directors and management of the Group are responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying *"Report of Novartis Management on Internal Control Over Financial Reporting"* appearing under Item 15(b). Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated audits. We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board of the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with IFRS, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk

that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

PricewaterhouseCoopers AG

/s/ BRUNO ROSSI	/s/ MICHAEL P. NELLIGAN
Bruno Rossi *Audit expert* *Auditor in charge*	Michael P. Nelligan *Global relationship partner*

Basel, January 28, 2014

NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED INCOME STATEMENTS

(For the years ended December 31, 2013, 2012 and 2011)

	Note	2013	Restated 2012[1]	Restated 2011[1]
		$ m	$ m	$ m
Net sales	3	**57,920**	**56,673**	**58,566**
Other revenues		911	888	809
Cost of goods sold		(19,608)	(18,756)	(18,983)
Gross profit		**39,223**	**38,805**	**40,392**
Marketing & Sales		(14,549)	(14,353)	(15,079)
Research & Development		(9,852)	(9,332)	(9,583)
General & Administration		(3,060)	(2,937)	(2,970)
Other income		1,367	1,049	1,192
Other expense		(2,219)	(2,039)	(3,172)
Operating income	3	**10,910**	**11,193**	**10,780**
Income from associated companies	4	600	552	528
Interest expense	5	(683)	(724)	(751)
Other financial income and expense	5	(92)	(96)	(2)
Income before taxes		**10,735**	**10,925**	**10,555**
Taxes	6	(1,443)	(1,542)	(1,483)
Net income		**9,292**	**9,383**	**9,072**
Attributable to:				
Shareholders of Novartis AG		*9,175*	*9,270*	*8,940*
Non-controlling interests		*117*	*113*	*132*
Basic earnings per share ($)	7	3.76	3.83	3.75
Diluted earnings per share ($)	7	3.70	3.79	3.70

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30).

The accompanying Notes form an integral part of the consolidated financial statements.

NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(For the years ended December 31, 2013, 2012 and 2011)

	Note	2013	Restated 2012[1]	Restated 2011[1]
		$ m	$ m	$ m
Net income		**9,292**	**9,383**	**9,072**
Other comprehensive income to be eventually recycled into the consolidated income statement:				
Fair value adjustments on marketable securities, net of taxes	8.1	132	75	(20)
Fair value adjustments on deferred cash flow hedges, net of taxes	8.1	41	41	41
Total fair value adjustments on financial instruments, net of taxes	8.1	173	116	21
Novartis share of other items recorded in comprehensive income recognized by associated companies, net of taxes	8.2	5	(107)	1
Currency translation effects	8.3	676	808	(559)
Total of items to eventually recycle		**854**	**817**	**(537)**
Other comprehensive income never to be recycled into the consolidated income statement:				
Actuarial gains/(losses) from defined benefit plans, net of taxes	8.4	1,504	(1,581)	(1,221)
Total comprehensive income		**11,650**	**8,619**	**7,314**
Attributable to:				
Shareholders of Novartis AG		*11,538*	*8,507*	*7,198*
Non-controlling interests		*112*	*112*	*116*

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30).

The accompanying Notes form an integral part of the consolidated financial statements.

NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(For the years ended December 31, 2013, 2012 and 2011)

	Note	Share capital	Treasury shares	Share premium	Retained earnings	Total value adjustments	Issued share capital and reserves attributable to Novartis shareholders	Non-controlling interests	Total equity
		$ millions	$ millions	$ millions	$ millions	$ millions	$ millions	$ millions	$ millions
Total equity at January 1, 2011—published		**957**	**(125)**	**198**	**61,074**	**1,092**	**63,196**	**6,573**	**69,769**
Reclassification of share premium to retained earnings	9.1			(198)	198				
Reclassification of revaluation of previously held equity interest to retained earnings	8				685	(685)			
Restatement due to revised IAS 19 on *Employee Benefits*	8/30				22		22		22
Total equity at January 1, 2011—restated		**957**	**(125)**		**61,979**	**407**	**63,218**	**6,573**	**69,791**
Net income, restated[1]					8,940		8,940	132	9,072
Other comprehensive income, restated[1]	8				1	(1,743)	(1,742)	(16)	(1,758)
Total comprehensive income					**8,941**	**(1,743)**	**7,198**	**116**	**7,314**
Dividends	9.2				(5,368)		(5,368)		(5,368)
Purchase of treasury shares	9.3		(35)		(3,593)		(3,628)		(3,628)
Increase in equity from exercise of options and employee transactions	9.4		4		164		168		168
Equity-based compensation	9.6		4		802		806		806
Excess of consideration exchanged for acquiring non-controlling interest compared to the recorded amounts	9.9				(5,664)		(5,664)		(5,664)
Changes in non-controlling interests	9.8							(6,593)	(6,593)
Fair value of Novartis shares used to acquire outstanding non-controlling interests in Alcon, Inc.	9.10	59	31		9,073		9,163		9,163
Total of other equity movements		**59**	**4**		**(4,586)**		**(4,523)**	**(6,593)**	**(11,116)**
Total equity at December 31, 2011—restated		**1,016**	**(121)**		**66,334**	**(1,336)**	**65,893**	**96**	**65,989**
Net income, restated[1]					9,270		9,270	113	9,383
Other comprehensive income, restated[1]	8				(107)	(656)	(763)	(1)	(764)
Total comprehensive income					**9,163**	**(656)**	**8,507**	**112**	**8,619**
Dividends	9.2				(6,030)		(6,030)		(6,030)
Purchase of treasury shares	9.3		(5)		(500)		(505)		(505)
Increase in equity from exercise of options and employee transactions	9.4		7		409		416		416
Reduction of share capital	9.5	(15)	21		(6)				
Equity-based compensation	9.6		6		850		856		856
Changes in non-controlling interests	9.8							(82)	(82)
Total of other equity movements		**(15)**	**29**		**(5,277)**		**(5,263)**	**(82)**	**(5,345)**
Total equity at December 31, 2012		**1,001**	**(92)**		**70,220**	**(1,992)**	**69,137**	**126**	**69,263**
Net income					9,175		9,175	117	9,292
Other comprehensive income	8				5	2,358	2,363	(5)	2,358
Total comprehensive income					**9,180**	**2,358**	**11,538**	**112**	**11,650**
Dividends	9.2				(6,100)		(6,100)		(6,100)
Purchase of treasury shares	9.3		(22)		(2,968)		(2,990)		(2,990)
Increase in equity from exercise of options and employee transactions	9.4		19		1,672		1,691		1,691
Equity-based compensation	9.6		6		1,071		1,077		1,077
Impact of change in ownership of consolidated entities	9.7				(10)		(10)		(10)
Changes in non-controlling interests	9.8							(109)	(109)
Total of other equity movements			**3**		**(6,335)**		**(6,332)**	**(109)**	**(6,441)**
Total equity at December 31, 2013		**1,001**	**(89)**		**73,065**	**366**	**74,343**	**129**	**74,472**

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30).

The accompanying Notes form an integral part of the consolidated financial statements.

NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED BALANCE SHEETS

(At December 31, 2013 and 2012)

	Note	2013	Restated 2012[1]
		$ m	$ m
Assets			
Non-current assets			
Property, plant & equipment	10	18,197	16,939
Goodwill	11	31,026	31,090
Intangible assets other than goodwill	11	27,841	30,331
Investments in associated companies	4	9,225	8,840
Deferred tax assets	12	7,375	7,365
Financial assets	13	1,523	1,117
Other non-current assets	13	525	505
Total non-current assets without disposal group		**95,712**	**96,187**
Current assets			
Inventories	14	7,267	6,744
Trade receivables	15	9,902	10,051
Total marketable securities, commodities, time deposits and derivative financial instruments	16	2,535	2,567
Cash and cash equivalents	16	6,687	5,552
Other current assets	17	3,392	3,090
Total current assets without disposal group		**29,783**	**28,004**
Assets of disposal group held for sale	2	759	
Total current assets		**30,542**	**28,004**
Total assets		**126,254**	**124,191**
Equity and liabilities			
Equity			
Share capital	18	1,001	1,001
Treasury shares	18	(89)	(92)
Reserves		73,431	68,228
Issued share capital and reserves attributable to Novartis AG shareholders		**74,343**	**69,137**
Non-controlling interests		129	126
Total equity		**74,472**	**69,263**
Liabilities			
Non-current liabilities			
Financial debts	19	11,242	13,781
Deferred tax liabilities	12	6,904	7,286
Provisions and other non-current liabilities	20	7,268	9,810
Total non-current liabilities		**25,414**	**30,877**
Current liabilities			
Trade payables		6,148	5,593
Financial debts and derivative financial instruments	21	6,776	5,945
Current income tax liabilities		2,459	2,070
Provisions and other current liabilities	22	10,935	10,443
Total current liabilities without disposal group		**26,318**	**24,051**
Liabilities of disposal group held for sale	2	50	
Total current liabilities		**26,368**	**24,051**
Total liabilities		**51,782**	**54,928**
Total equity and liabilities		**126,254**	**124,191**

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30).

The accompanying Notes form an integral part of the consolidated financial statements.

NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED CASH FLOW STATEMENTS

(For the years ended December 31, 2013, 2012 and 2011)

	Note	2013	Restated 2012[1]	Restated 2011[1]
		$ m	$ m	$ m
Net income		**9,292**	**9,383**	**9,072**
Reversal of non-cash items	23.1	7,750	8,073	9,473
Dividends received from associated companies and others		446	426	404
Interest received		40	49	66
Interest paid		(609)	(594)	(640)
Other financial receipts		55	214	
Other financial payments		(22)	(22)	(47)
Taxes paid		(2,024)	(2,022)	(2,435)
Cash flows before working capital and provision changes		***14,928***	***15,507***	***15,893***
Restructuring payments and other cash payments from provisions		(1,015)	(1,173)	(1,471)
Change in net current assets and other operating cash flow items	23.2	(739)	(140)	(113)
Cash flows from operating activities		**13,174**	**14,194**	**14,309**
Purchase of property, plant & equipment		(3,064)	(2,698)	(2,167)
Proceeds from sales of property, plant & equipment		60	92	61
Purchase of intangible assets		(507)	(370)	(220)
Proceeds from sales of intangible assets		154	163	643
Purchase of financial assets		(165)	(180)	(139)
Proceeds from sales of financial assets		315	221	59
Purchase of other non-current assets		(39)	(57)	(48)
Proceeds from sales of other non-current assets		17	18	5
Acquisitions of interests in associated companies		(52)		(12)
Acquisitions of businesses	23.3	(42)	(1,741)	(569)
Purchase of marketable securities and commodities		(278)	(1,639)	(1,750)
Proceeds from sales of marketable securities and commodities		249	516	3,345
Cash flows used in investing activities		**(3,352)**	**(5,675)**	**(792)**
Dividends paid to shareholders of Novartis AG		(6,100)	(6,030)	(5,368)
Acquisition of treasury shares		(2,930)	(505)	(3,628)
Proceeds from exercise options and other treasury share transactions		1,693	414	159
Increase in non-current financial debts		93	1,979	281
Repayment of non-current financial debts		(2,022)	(704)	(28)
Change in current financial debts		596	(1,737)	(3,054)
Proceeds from issuance of share capital to third parties				4
Impact of change in ownership of consolidated entities		4	(6)	(3,187)
Dividends paid to non-controlling interests and other financing cash flows		(103)	(86)	(203)
Cash flows used in financing activities		**(8,769)**	**(6,675)**	**(15,024)**
Net effect of currency translation on cash and cash equivalents		82	(1)	(103)
Net change in cash and cash equivalents		**1,135**	**1,843**	**(1,610)**
Cash and cash equivalents at January 1		5,552	3,709	5,319
Cash and cash equivalents at December 31		**6,687**	**5,552**	**3,709**

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30).

The accompanying Notes form an integral part of the consolidated financial statements.

NOTES TO THE NOVARTIS GROUP CONSOLIDATED FINANCIAL STATEMENTS

1. Significant Accounting Policies

The Novartis Group (Novartis or Group) is a multinational group of companies specializing in the research, development, manufacturing and marketing of a broad range of healthcare products led by innovative pharmaceuticals. It is headquartered in Basel, Switzerland.

The consolidated financial statements of the Group are prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). They are prepared in accordance with the historical cost convention except for items that are required to be accounted for at fair value.

The Group's financial year-end is December 31 which is also the annual closing date of the individual entities' financial statements incorporated into the Group's consolidated financial statements.

The preparation of financial statements requires management to make certain estimates and assumptions, either at the balance sheet date or during the year that affect the reported amounts of assets and liabilities, including any contingent amounts, as well as of revenues and expenses. Actual outcomes and results could differ from those estimates and assumptions.

Listed below are accounting policies of significance to Novartis or, in cases where IFRS provides alternatives, the option adopted by Novartis.

Scope of Consolidation

The consolidated financial statements include all entities, including structured entities, over which Novartis AG, Basel, Switzerland, directly or indirectly has control (generally as a result of owning more than 50% of the entity's voting interest). Consolidated entities are also referred to as "subsidiaries".

In cases where Novartis does not fully own a subsidiary it has elected to value any remaining outstanding non-controlling interest at the time of acquiring control of the subsidiary at its proportionate share of the fair value of the net identified assets.

Investments in associated companies (generally defined as investments in entities in which Novartis holds between 20% and 50% of voting shares or over which it otherwise has significant influence) and joint ventures are accounted for using the equity method.

Foreign Currencies

The consolidated financial statements of Novartis are presented in US dollars ($). The functional currency of subsidiaries is generally the local currency of the respective entity. The functional currency used for the reporting of certain Swiss and foreign finance entities is $ instead of their respective local currencies. This reflects the fact that the cash flows and transactions of these entities are primarily denominated in these currencies.

For subsidiaries not operating in hyperinflationary economies, the subsidiary's results, financial position and cash flows that do not have $ as their functional currency are translated into $ using the following exchange rates:

- income, expense and cash flows using for each month the average exchange rate with the US dollar values for each month being aggregated during the year.
- balance sheets using year-end exchange rates.

1. Significant Accounting Policies (Continued)

– 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 and then translated into $ at the year-end exchange rate with any gain or loss on the net monetary position recorded in the related functional lines in the consolidated income statement.

Acquisition of Assets

Acquired assets are initially recognized on the balance sheet at cost if they meet the criteria for capitalization. If acquired as part of a business combination, the fair value of identified assets represents the cost for these assets. If separately acquired, the cost of the asset includes the purchase price and any directly attributable costs for bringing the asset into the condition to operate as intended. Expected costs for obligations to dismantle and remove property, plant and equipment when it is no longer used are included in their cost.

Property, Plant and Equipment

Property, plant and equipment are depreciated on a straight-line basis in the consolidated income statement over their estimated useful lives. Leasehold land is depreciated over the period of its lease whereas freehold land is not depreciated. Property, plant and equipment are assessed for impairment whenever there is an indication that the balance sheet carrying amount may not be recoverable using cash flow projections for the whole useful life. The related depreciation expense is included in the costs of the functions using the asset.

The following table shows the respective useful lives for property, plant and equipment:

	Useful life
Buildings	20 to 40 years
Machinery and other equipment	
Machinery and equipment	7 to 20 years
Furniture and vehicles	5 to 10 years
Computer hardware	3 to 7 years

Government grants obtained for construction activities, including any related equipment, are deducted from the gross acquisition cost to arrive at the balance sheet carrying value of the related assets.

Goodwill and Intangible Assets

Goodwill

Goodwill arises in a business combination and is the excess of the consideration transferred to acquire a business over the underlying fair value of the net identified assets acquired. It is allocated to cash generating units (CGUs) which are usually represented by the reported segments. For Consumer Health, each division is a separate CGU. Goodwill is tested for impairment annually at the CGU level and any impairment charges are recorded under "Other Expense" in the consolidated income statement.

1. Significant Accounting Policies (Continued)

Intangible Assets Available-for-Use

Novartis has the following classes of available-for-use intangible assets other than goodwill: Currently marketed products; Marketing know-how; Technologies; Other intangible assets (including computer software) and the Alcon brand name.

Currently marketed products represent the composite value of acquired intellectual property, patents, and distribution rights and product trade names.

Marketing know-how represents the value attributable to the expertise acquired for marketing and distributing Alcon surgical equipment.

Technologies represent identified and separable acquired know-how used in the research, development and production processes.

Significant investments in internally developed and acquired computer software are capitalized and included in the "Other" category and amortized once available for use.

The Alcon brand name is shown separately as it is the only Novartis intangible asset that is available for use with an indefinite useful life. Novartis considers that it is appropriate that the Alcon brand name has an indefinite life since Alcon has a history of strong revenue and cash flow performance, and Novartis has the intent and ability to support the brand with spending to maintain its value for the foreseeable future.

Except for the Alcon brand name, intangible assets available for use are amortized over their estimated useful lives on a straight-line basis and evaluated for potential impairment whenever facts and circumstances indicate that their carrying value may not be recoverable. The Alcon brand name is not amortized, but evaluated for potential impairment annually.

The following table shows the respective useful lives for available-for-use intangible assets and the location in the consolidated income statement in which the respective amortization and any potential impairment charge is recognized:

	Useful life	Income statement location for amortization and impairment charges
Currently marketed products	5 to 20 years	"Cost of goods sold"
Marketing know-how	25 years	"Cost of goods sold"
Technologies	10 to 30 years	"Cost of goods sold" or "Research and Development"
Other (including computer software)	3 to 5 years	In the respective functional expense
Alcon brand name	not amortized, indefinite useful life	Not applicable

Intangible Assets Not Yet Available-for-Use

Acquired research and development intangible assets, which are still under development and have accordingly not yet obtained marketing approval, are recognized as In Process Research & Development (IPR&D). IPR&D assets are only capitalized if they are deemed to enhance the intellectual property of

1. Significant Accounting Policies (Continued)

Novartis and include items such as initial upfront and milestone payments on licensed or acquired compounds.

IPR&D is not amortized, but evaluated for potential impairment on an annual basis or when facts and circumstances warrant. Any impairment charge is recorded in the consolidated income statement under "Research & Development". Once a project included in IPR&D has been successfully developed it is transferred to the "Currently marketed product" category.

Impairment of Goodwill and Intangible Assets

An asset is considered impaired when its balance sheet carrying amount exceeds its estimated recoverable amount, which is defined as the higher of its fair value less costs of disposal and its value in use. Usually, Novartis applies the fair value less costs of disposal method for its impairment assessment. In most cases no directly observable market inputs are available to measure the fair value less costs of disposal. Therefore, an estimate is derived indirectly and is based on net present value techniques utilizing post-tax cash flows and discount rates. In the limited cases where the value in use method is applied, net present value techniques are applied using pre-tax cash flows and discount rates.

Fair value reflects estimates of assumptions that market participants would be expected to use when pricing the asset or CGU, and for this purpose management considers the range of economic conditions that are expected to exist over the remaining useful life of the asset.

The estimates used in calculating the net present values are highly sensitive and depend on assumptions specific to the nature of the Group's activities with regard to:

- amount and timing of projected future cash flows;
- outcome of R&D activities (compound efficacy, results of clinical trials, etc.);
- amount and timing of projected costs to develop IPR&D into commercially viable products;
- probability of obtaining regulatory approval;
- long-term sales forecasts for periods of up to 25 years;
- sales erosion rates after the end of patent protection and timing of the entry of generic competition;
- selected tax rate;
- behavior of competitors (launch of competing products, marketing initiatives, etc.); and
- selected discount rate.

Generally, for intangible assets with a definite useful life Novartis uses cash flow projections for the whole useful life of these assets, and for goodwill and the Alcon brand name, Novartis utilizes cash flow projections for a five-year period based on management forecasts, with a terminal value based on sales projections usually in line with or lower than inflation rates for later periods. Probability-weighted scenarios are typically used.

1. Significant Accounting Policies (Continued)

Discount rates used are based on the Group's estimated weighted average cost of capital adjusted for specific country and currency risks associated with cash flow projections as an approximation of the weighted average cost of capital of a comparable market participant.

Due to the above factors, actual cash flows and values could vary significantly from forecasted future cash flows and related values derived using discounting techniques.

Impairment of Associated Companies

Novartis considers investments in associated companies for impairment evaluation whenever there is a quoted share price indicating a fair value less than the per-share balance sheet carrying value for the investment. For unquoted investments in associated companies recent financial information is taken into account to assess whether an impairment evaluation is necessary.

If the recoverable amount of the investment is estimated to be lower than the balance sheet carrying amount an impairment charge is recognized for the difference in the consolidated income statement under "Income from associated companies".

Cash and Cash equivalents, Marketable Securities, Commodities, Derivative Financial Instruments and Non-Current Financial Assets

Cash and cash equivalents include highly liquid investments with original maturities of three months or less which are readily convertible to known amounts of cash. Bank overdrafts are usually presented within "Current financial debts" on the consolidated balance sheet except in cases where a right of offset has been agreed with a bank which then allows for presentation on a net basis.

The Group defines "marketable securities" as those financial assets which are managed by the Group's Corporate Treasury and consist principally of quoted equity and quoted debt securities as well as fund investments which are principally traded in liquid markets. Certain marketable securities are managed independently of Corporate Treasury, and these are typically held for long-term strategic purposes and are therefore classified as non-current financial assets. They include equity securities and fund investments.

Marketable securities are initially recorded at fair value on their trade date which is different from the settlement date when the transaction is ultimately effected. Quoted securities are re-measured at each reporting date to fair value based on current market prices. If the market for a financial asset is not active or no market is available, fair values are established using valuation techniques. Apart from discounted cash flow analysis and other pricing models, for the majority of investments in what is known as the "Level 3" hierarchy, the valuation is based on the acquisition cost as the best approximation of the fair value of the investee. This is adjusted for a higher or lower valuation in connection with a partial disposal, a new round of financing and for the investee's performance below or above expectations. The fair value of investments in "Level 3" is reviewed regularly for a possible diminution in value.

The Group has classified all its equity and quoted debt securities as well as fund investments as available-for-sale, as they are not acquired to generate profit from short-term fluctuations in price. Unrealized gains, except exchange gains related to quoted debt instruments, are recorded as a fair value adjustment in the consolidated statement of comprehensive income. They are recognized in the consolidated income statement when the financial asset is sold at which time the gain is transferred either to "Other financial income and expense" for the marketable securities managed by the Group's Corporate

1. Significant Accounting Policies (Continued)

Treasury or to "Other income" in the consolidated income statement for all other equity securities and fund investments. Exchange gains related to quoted debt instruments are immediately recognized in the consolidated income statement under "Other financial income and expense".

A security is assessed for impairment when its market value at the balance sheet date is less than initial cost reduced by any previously recognized impairment. Impairments on equity securities, quoted debt securities and fund investments, and on exchange rate gains and losses on quoted debt securities in a foreign currency which are managed by the Group's Corporate Treasury are immediately recorded in "Other financial income and expense". Impairments are recorded for all other equity securities and other fund investments in "Other expense" or "Other income" in the consolidated income statement.

Commodities include gold bullion or coins which are valued at the lower of cost or fair value using current market prices. The changes in fair value below cost are immediately recorded in "Other financial income and expense".

Other non-current financial assets including loans are carried at either amortized cost which reflects the time value of money or cost adjusted for any accrued interest, less any allowances for uncollectable amounts. Impairments and exchange rate gains and losses on other non-current financial assets, including loans, as well as interest income using the effective interest rate method, are immediately recorded in "Other income" or "Other expense" in the consolidated income statement.

Derivative financial instruments are initially recognized in the balance sheet at fair value and are re-measured to their current fair value at the end of each subsequent reporting period. The valuation of a forward exchange rate contract is based on the discounted cash flow model, using interest curves and spot rates at the reporting date as observable inputs.

Options are valued based on a modified Black-Scholes model using volatility and exercise prices as major observable inputs.

The Group utilizes derivative financial instruments for the purpose of hedging to reduce the volatility in the Group's performance due to the exposure to various types of business risks. The Group, therefore, enters into certain derivative financial instruments which provide effective economic hedges. The risk reduction is obtained because the derivative's value or cash flows are expected, wholly or partly, to move inversely to the hedged item and, therefore, offset changes in the value or cash flows of the hedged item. The overall hedging strategy is aiming to mitigate the currency and interest exposure risk of positions which are contractually agreed and to partially hedge the exposure risk of selected anticipated transactions. However, the Group generally does not hedge the translation risk related to its foreign investments.

Not all of the financial impact of derivative financial instruments can be matched with the financial impact of the economically hedged item. A prerequisite for obtaining this accounting-hedge relationship is extensive documentation on inception and proving on a regular basis that the economic hedge is effective for accounting purposes. Changes in the fair value of any derivative instruments that do not qualify for cash flow hedge accounting are recognized immediately in "Other financial income and expense" in the consolidated income statement.

1. Significant Accounting Policies (Continued)

Inventories

Inventory is valued at acquisition or production cost determined on a first-in first-out basis. This value is used for the "Cost of goods sold" in the consolidated income statement. Unsalable inventory is fully written off in the consolidated income statement under "Cost of goods sold".

Trade Receivables

Trade receivables are initially recognized at their invoiced amounts including any related sales taxes less adjustments for estimated revenue deductions such as rebates, chargebacks and cash discounts.

Provisions for doubtful trade receivables are established once there is an indication that it is likely that a loss will be incurred. These provisions represent the difference between the trade receivable's carrying amount in the consolidated balance sheet and the estimated net collectible amount. Significant financial difficulties of a customer, such as probability of bankruptcy, financial reorganization, default or delinquency in payments are considered indicators that recovery of the trade receivable is doubtful. Charges for doubtful trade receivables are recognized in the consolidated income statement within "Marketing & Sales" expenses.

Legal and Environmental Liabilities

Novartis and its subsidiaries are subject to contingencies arising in the ordinary course of business such as patent litigation, environmental remediation liabilities and other product-related litigation, commercial litigation, and governmental investigations and proceedings. Provisions are made where a reliable estimate can be made of the probable outcome of legal or other disputes including related fees and expenses against the subsidiary. Novartis believes that its total provisions are adequate based upon currently available information, however, given the inherent difficulties in estimating liabilities in this area, Novartis may incur additional costs beyond the amounts provided. Management believes that such additional amounts, if any, would not be material to the Group's financial condition but could be material to the results of operations or cash flows in a given period.

Contingent Consideration

In a business combination it is necessary to recognize contingent future payments to previous owners representing contractually defined potential amounts as a liability. Usually for Novartis these are linked to milestone or royalty payments related to intangible assets and are recognized as a financial liability at their fair value which is then re-measured at each subsequent reporting date. These estimations typically depend on factors such as technical milestones or market performance and are adjusted for the probability of their likelihood of payment and if material, appropriately discounted to reflect the impact of time. Changes in the fair value of contingent payments in subsequent periods are recognized in the consolidated income statement in "Cost of goods sold" for currently marketed products and in "Research & Development" for IPR&D. The effect of unwinding the discount over time is recognized in "Interest expense" in the consolidated income statement. Novartis does not recognize contingent consideration associated with asset purchases outside of a business combination that are conditional upon future events which are within its control until such time as there is an unconditional obligation. If the contingent consideration is outside the control of Novartis a liability is recognized once it becomes probable that the contingent consideration will become due. In both cases, if appropriate, a corresponding asset is recorded.

1. Significant Accounting Policies (Continued)

Defined Benefit Pension Plans and Other Post-Employment Benefits

The liability in respect of defined benefit pension plans and other post-employment benefits is the defined benefit obligation calculated annually by independent actuaries using the projected unit credit method. The current service cost for such post-employment benefit plans is included in the personnel expenses of the various functions where the associates are employed, while the net interest on the net defined benefit liability or asset is recognized as "Other expense" or "Other income".

Treasury Shares

Treasury shares are initially recorded at fair value on their trade date which is different from the settlement date when the transaction is ultimately effected. Treasury shares are deducted from consolidated equity at their nominal value of CHF 0.50 per share. Differences between this 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. For surgical equipment this occurs when title and risk and rewards are transferred after installation and any required training has been completed. For surgical equipment leased to customers, revenue representing the net present value of the minimum lease payments is recognized at the commencement of the lease term if the lease term is for the major part of the economic life of the asset or if the payments represent substantially most of its fair value, even if the legal ownership is not transferred. If products are stockpiled at the request of the customer, revenue is only recognized once the products have been inspected and accepted by the customer and there is no right of return or replenishment on product expiry and cost of storage will be paid by the customer on normal commercial terms.

Provisions for rebates and discounts granted to government agencies, wholesalers, retail pharmacies, managed care and other customers are recorded as a reduction of revenue at the time the related revenues are recorded or when the incentives are offered. They are calculated on the basis of historical experience and the specific terms in the individual agreements. Provisions for refunds granted to healthcare providers under innovative pay-for-performance agreements are recorded as a reduction of revenue at the time the related sales are recorded. They are calculated on the basis of historical experience and clinical data available for the product as well as the specific terms in the individual agreements. In cases where historical experience and clinical data are not sufficient for a reliable estimation of the outcome, revenue recognition is deferred until such history is available.

Cash discounts are offered to customers to encourage prompt payment and are recorded as revenue deductions. Wholesaler shelf-inventory adjustments are granted to customers based on the existing inventory of a product at the time of decreases in the invoice or contract price of a product or at the point

1. Significant Accounting Policies (Continued)

of sale if a price decline is reasonably estimable. When there is historical experience of Novartis agreeing to customer returns or Novartis can otherwise reasonably estimate expected future returns, a provision is recorded for estimated sales returns. In doing so the estimated rate of return is applied, determined based on historical experience of customer returns or considering any other relevant factors. This is applied to the amounts invoiced also considering the amount of returned products to be destroyed versus products that can be placed back in inventory for resale. Where shipments are made on a re-sale or return basis, without sufficient historical experience for estimating sales returns, revenue is only recorded when there is evidence of consumption or when the right of return has expired.

Provisions for revenue deductions are adjusted to actual amounts as rebates, discounts and returns are processed. The provision represents estimates of the related obligations, requiring the use of judgment when estimating the effect of these sales deductions.

Other Revenue

Royalty income is reported under "Other revenue" in the consolidated income statement and recognized on an accrual basis in accordance with the substance of the relevant agreements.

Research & Development

Internal Research & Development (R&D) costs are fully charged to "Research & Development" in the consolidated income statement in the period in which they are incurred. The Group considers that regulatory and other uncertainties inherent in the development of new products preclude the capitalization of internal development expenses as an intangible asset until marketing approval from a regulatory authority is obtained in a major market such as the United States, the European Union, Switzerland or Japan.

Payments made to third parties in compensation for subcontracted R&D, such as contract research and development organizations, that is deemed not to enhance the intellectual property of Novartis are expensed as internal R&D expenses in the period in which they are incurred. Such payments are only capitalized if they meet the criteria for recognition of an internally generated intangible asset, usually when marketing approval has been achieved from a regulatory authority in a major market.

Payments made to third parties in order to in-license or acquire intellectual property rights, compounds and products (IPR&D), including initial upfront and subsequent milestone payments, are capitalized as are payments for other assets, such as technologies to be used in R&D activities. If 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

1. Significant Accounting Policies (Continued)

are incurred in cases where it is anticipated that the related product will be sold over a longer period than the activities required to be performed to obtain the marketing approval. In the rare cases when costs related to the conditional approval need to be incurred over a period beyond that of the anticipated product sales, then the expected costs of these activities will be expensed over the shorter period of the anticipated product sales. As a result, all activities necessary as a condition to maintain a received approval, whether conditional or not, are expensed in the consolidated income statement.

IPR&D assets are transferred to "Currently marketed products" once the related project has been successfully developed and then are amortized in the consolidated income statement over their useful life. Other acquired technologies included in intangible assets are amortized in the consolidated income statement over their estimated useful lives.

Inventory produced ahead of regulatory approval is provisioned against and the charge is included in "Other expense" in the consolidated income statement as its ultimate use cannot be assured. If this inventory can be subsequently sold, the provision is released to "Other income" in the consolidated income statement either on approval by the appropriate regulatory authority or, exceptionally in Europe, on recommendation by the Committee for Medicinal Products for Human Use (CHMP) if approval is virtually certain.

Share-Based Compensation

The fair value of Novartis shares, restricted shares, restricted share units (RSU) and American Depositary Receipts (ADRs) and related options granted to associates as compensation is 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. Assumptions are made concerning the forfeiture rate of not meeting the vesting conditions which are adjusted during the vesting period so that at the end of the vesting period there is only a charge for vested amounts. If a participant leaves Novartis, for reasons other than retirement, disability or death, then unvested shares, ADRs, RSUs and share options are forfeited, unless determined otherwise by the Compensation Committee, for example, in connection with a reorganization or divestment.

An option's fair value at grant date is calculated using the trinomial valuation method. Accurately measuring the value of share options is difficult and requires an estimate of factors used in the valuation model. These key factors involve uncertain future events, such as expected dividend yield and expected share price volatility. Expected volatilities are based on those implied from listed warrants on Novartis shares, and—to the extent that equivalent options are not available—a future extrapolation based on historical volatility. Novartis shares, restricted shares, RSUs and ADRs are valued using the market value on the grant date.

Government Grants

Grants from governments or similar organizations are recognized at their fair value when there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions.

Government grants related to income are deferred and recognized in the consolidated income statement over the period necessary to match them with the related costs which they are intended to compensate.

1. Significant Accounting Policies (Continued)

The accounting policy for property, plant and equipment describes the treatment of any related grants.

Restructuring Charges

Charges to increase restructuring provisions are included in "Other expense" in the consolidated income statements. Corresponding releases are recorded in "Other income" in the consolidated income statement.

Taxes

Taxes on income are provided in the same periods as the revenues and expenses to which they relate and include any interest and penalties incurred during the period. Deferred taxes are determined using the comprehensive liability method and are calculated on the temporary differences that arise between the tax base of an asset or liability and its carrying value in the balance sheet prepared for consolidation purposes, except for those temporary differences related to investments in subsidiaries and associated companies, where the timing of their reversal can be controlled and it is probable that the difference will not reverse in the foreseeable future. Furthermore, withholding or other taxes on eventual distribution of a subsidiary's retained earnings are only taken into account when a dividend has been planned since generally the retained earnings are reinvested.

The estimated amounts for current and deferred tax assets or liabilities, including any amounts related to any uncertain tax positions, are based on currently known facts and circumstances. Tax returns are based on an interpretation of tax laws and regulations and reflect estimates based on these judgments and interpretations. The tax returns are subject to examination by the competent taxing authorities, which may result in an assessment being made requiring payments of additional tax, interest or penalties. Inherent uncertainties exist in the estimates of the tax positions.

Non-Current Assets Held for Sale

Non-current assets are classified as assets held for sale 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.

Status of Adoption of Significant New or Amended IFRS Standards or Interpretations

The Group introduced the revised IFRS accounting standard IAS 19 on *Employee Benefits* as of January 1, 2013 including the amendment issued in November 2013. The principal impact of this is that the return on pension plan assets and the interest calculated on the defined benefit obligations now use the same interest rate reflecting the current market yield of high-quality corporate bonds. Previously the return on plan assets was calculated based on the higher long-term expected return on assets, so the adoption of the new accounting standard increases the annual cost of post-employment benefits included in "Other Expense" in Corporate. It has also been required to restate for the amortization of previously unrecognized past service credits.

As required by the new standard, the Group's 2012 and 2011 consolidated financial statements have been retrospectively restated to reflect these changes. For the full year 2012, the impact of these restatements is an additional expense of $318 million before tax ($235 million after tax), offset by an

1. Significant Accounting Policies (Continued)

adjustment of the actuarial losses recognized in consolidated comprehensive income and for the full year 2011, an additional expense of $218 million before tax ($173 million after tax), offset by an adjustment of the actuarial losses recognized in consolidated comprehensive income.

Furthermore, the revised IAS 19 requires the immediate recognition of past service costs in the consolidated income statement, which were previously only recognized upon vesting. Accordingly, Novartis has restated its December 31, 2010/January 1, 2011, December 31, 2011 and December 31, 2012 consolidated balance sheets so that past service credits of $35 million, $77 million and $69 million, net were recognized against other non-current liabilities. The related tax impact amounted to $13 million, $28 million and $25 million, respectively.

A tabular reconciliation of the restatement impact of implementing the revised IAS 19 can be found in Note 30.

The following additional new standards and amendments have been adopted by Novartis from January 1, 2013 but have had no significant impact on the Group's consolidated financial statements:

- IFRS 10 *Consolidated Financial Statements*. This requires consolidation of an investee based on control, i.e. when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee.
- IFRS 11 *Joint Arrangements*. This requires classification of joint arrangements as either joint operations, where assets, liabilities, revenues and expenses are accounted for proportionally in accordance with the agreement, or as joint ventures, which are accounted for under the equity method.
- IFRS 12 *Disclosures of interests in other entities*. This brings together the disclosure requirements that apply to subsidiaries, associated companies, joint ventures, structured entities and unconsolidated structured entities.
- IFRS 13 *Fair value measurement*. This standard introduces a fair value hierarchy, additional disclosures, a requirement for the fair value of liabilities to be based on the assumption that the liability will be transferred to another party and removes the requirements to use bid and ask prices for actively quoted financial assets and liabilities.
- Amendment to IAS 1 *Financial Statement presentation*. This amendment introduces a requirement to group items presented in "Other comprehensive income" on the basis of whether they are potentially reclassifiable to profit or loss subsequently.

Issued IFRS Standards Not Yet Effective

The following new IFRS standard will, based on a Novartis analysis, be of significance to the Group, but has not yet been early adopted.

In 2009, 2010 and 2011, IFRS 9 *Financial Instruments* was issued which will substantially change the classification and measurement of financial instruments, hedging requirements and the recognition of certain fair value changes in the consolidated financial statements. Currently, only new requirements on the classification and measurement for financial assets and financial liabilities have been issued. The mandatory effective date for requirements issued as part of IFRS 9 will be determined once the project is closer to completion.

1. Significant Accounting Policies (Continued)

IFRIC 21 *Levies*, an interpretation of IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*, was issued in May 2013 and is required to be adopted on January 1, 2014. The interpretation clarifies that the obligating event giving rise to a liability to pay a levy to a government agency is the activity that triggers the payment.

2. Significant Transactions

In 2013, there were no significant acquisitions, business combinations or other significant transactions. In 2013 the divestment of the blood transfusion diagnostics unit of the Vaccines and Diagnostics Division was announced and this closed on January 9, 2014. The only significant transaction in 2012 was the acquisition of Fougera and during 2011, full ownership and merger of Alcon as well as the acquisition of Genoptix, Inc., which are described below with further details in Note 24.

Significant Transaction in 2014

Divestment of blood transfusion diagnostic unit

On January 9, 2014 Novartis completed the divestment of its blood transfusion diagnostics unit to the Spanish company, Grifols S.A., for $1.7 billion in cash. The estimated pre-tax gain on this transaction, subject to finalization of the accounting, will be approximately $0.9 billion. This unit was part of the Novartis Vaccines and Diagnostics Division and was dedicated to increasing transfusion safety worldwide.

In the Group's consolidated balance sheet at December 31, 2013 the unit's assets and liabilities are separately shown as held for sale. Goodwill has been allocated to this disposal group based on the relative fair value of the disposal group and retained portion of the Division. The disposal group consists of the following:

	2013
	$ m
Assets of disposal group classified as held for sale	
Property, plant & equipment	145
Goodwill	267
Intangible assets other than goodwill	91
Deferred tax asset	3
Financial assets	7
Inventories	87
Trade receivables	154
Other current assets	5
Total	**759**

2. Significant Transactions (Continued)

	2013
	$ m
Liabilities of disposal group classified as held for sale	
Trade payables	38
Provisions and other current liabilities	12
Total	**50**

Significant Transaction in 2012

Sandoz—Acquisition of Fougera Pharmaceuticals, Inc.

On July 20, 2012, Sandoz completed the acquisition of 100% of Fougera Pharmaceuticals, Inc., a specialty dermatology generics company based in Melville, New York, for $1.5 billion in cash. Sandoz acquired Fougera for its strong dermatology development and manufacturing expertise. Fougera employed approximately 700 people.

The final purchase price allocation resulted in net identified assets of $0.6 billion (excluding acquired cash) and goodwill of $0.9 billion being recognized.

Significant Transactions in 2011

Alcon full ownership and merger in 2011

On April 8, 2011 a Novartis Extraordinary General Meeting approved the merger of Alcon, Inc. with Novartis AG leading to the creation of the Alcon Division which became the fifth reported segment in Novartis' strategically diversified healthcare portfolio. The Extraordinary General Meeting also authorized the issuance of 108 million new shares. Alcon shareholders received 2.9228 Novartis shares (which included a dividend adjustment) and $8.20 in cash for each share of Alcon, resulting in a total consideration of $168.00 per share.

During 2011, prior to the merger on April 8, 2011, 4.8% of the non-controlling interests in Alcon, Inc. were acquired for $2.4 billion. Completion of the acquisition of the outstanding 18.6% of Alcon Inc. on April 8, 2011 and subsequent merger, resulted in the issuance of Novartis shares with a fair value of $9.2 billion and a payment in cash of $0.5 billion to the Alcon, Inc. shareholders.

The final purchase price allocation was completed in 2011 and resulted in a fair value of net identifiable assets of $27.0 billion and goodwill of $18.0 billion. The excess of the value exchanged for the non-controlling interests in Alcon Inc, in 2011 over its recorded value together with merger related transaction costs resulted in a reduction in the Novartis consolidated equity of $5.7 billion.

Pharmaceuticals—Acquisition of Genoptix, Inc.

On March 7, 2011 Novartis completed the acquisition of 100% of Genoptix, Inc., a specialized laboratory providing personalized diagnostic services to United States community-based hematologists and oncologists for $458 million in cash. Genoptix employed approximately 500 people.

The final purchase price allocation resulted in net identified assets of $237 million and goodwill of $221 million.

3. Segmentation of Key Figures 2013, 2012 and 2011

Reporting segments are presented in a manner consistent with the internal reporting to the chief operating decision maker which is the Executive Committee of Novartis, except for Consumer Health which aggregates the OTC and Animal Health divisions. The Executive Committee of Novartis is responsible for allocating resources and assessing the performance of the reporting segments.

The businesses of Novartis are divided operationally on a worldwide basis into five reporting segments: Pharmaceuticals, Alcon, Sandoz, Vaccines and Diagnostics and Consumer Health. In addition, we separately report Corporate activities. Following the full acquisition of Alcon, Inc., on April 8, 2011 a new divisional segment allocation was introduced. As a result, the Alcon Division includes CIBA Vision and certain Pharmaceuticals Division ophthalmology products. Falcon, the US generics business of Alcon, Inc. was transferred to the Sandoz Division. Certain residual operational costs incurred for the Consumer Health Division headquarters were transferred to Corporate and Corporate R&D was transferred to the Pharmaceuticals Division. All segment results for 2011, 2012 and 2013 use this new allocation. Except for Consumer Health, these segments are managed separately because they research, develop, manufacture, distribute, and sell distinct products which require differing marketing strategies. In the case of Consumer Health, the segment comprises two divisions which are also managed separately, however, neither of these two divisions is material enough to the Group to be disclosed separately as a reporting segment. The reporting segments are as follows:

Pharmaceuticals researches, develops, manufactures, distributes and sells patented prescription medicines and is organized in the following business franchises: Primary Care, consisting of Primary Care medicines and Established Medicines; and Specialty Care, consisting of Ophthalmology, Neuroscience, Integrated Hospital Care, and Critical Care medicines. Novartis Oncology is organized as a business unit, responsible for the global development and marketing of oncology products. The Novartis Oncology Business Unit is not required to be disclosed separately as a segment since it shares common long-term economic perspectives, customers, research, development, production, distribution and regulatory factors with the rest of the division.

Alcon researches, discovers, develops, manufactures, distributes and sells eye care products. Alcon is the global leader in eye care with product offerings in Surgical, Ophthalmic Pharmaceuticals and Vision Care. In Surgical, Alcon develops, manufactures, distributes and sells ophthalmic surgical equipment, instruments, disposable products and intraocular lenses. In Ophthalmic Pharmaceuticals, Alcon discovers, develops, manufactures, distributes and sells medicines to treat chronic and acute diseases of the eye, as well as over-the-counter medicines for the eye. In Vision Care, Alcon develops, manufactures, distributes and sells contact lenses and lens care products.

Sandoz develops, manufactures, distributes and sells prescription medicines, as well as pharmaceutical and biotechnological active substances, which are not protected by valid and enforceable third-party patents. Sandoz has activities in Retail Generics, Anti-Infectives and Biopharmaceuticals & Oncology Injectables. In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals to third parties. Retail Generics includes the specialty areas of Dermatology, Respiratory and Ophthalmics. 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 manufacturing services to other companies and in Oncology Injectables, Sandoz develops, manufactures, and markets cytotoxic products for the hospital market.

3. Segmentation of Key Figures 2013, 2012 and 2011 (Continued)

Vaccines and Diagnostics consists of two activities: Vaccines and Diagnostics. Following the January 9, 2014 completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., the segment now consists only of Vaccines. Vaccines researches, develops, manufactures, distributes and sells human vaccines worldwide. Diagnostics researched, developed, distributed and sold blood testing and molecular diagnostics products.

Consumer Health consists of two divisions: OTC (over-the-counter medicines) and Animal Health. OTC offers readily available consumer medicine. Animal Health provides veterinary products for farm and companion animals.

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

The accounting policies mentioned above are used in the reporting of segment results. Inter-segmental sales are made at amounts which are considered to approximate arm's length transactions. The Executive Committee of Novartis evaluates segmental performance and allocates resources among the segments based on a number of measures including net sales, operating income and net operating assets. Segment net operating assets consist primarily of property, plant and equipment, intangible assets, inventories and trade and other operating receivables less operating liabilities.

Usually, no allocation of Corporate items is made to the segments. As a result, Corporate assets and liabilities principally consist of net liquidity (cash and cash equivalents, marketable securities less financial debts), investments in associated companies and current and deferred taxes and non-segment specific environmental remediation and post-employment benefit liabilities.

3. Segmentation of Key Figures 2013 and 2012 (Continued)

(In $ m)	Pharmaceuticals		Alcon		Sandoz		Vaccines and Diagnostics		Consumer Health		Corporate (including eliminations)		Total Group	
	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	Restated 2012[1]	2013	Restated 2012[1]
Net sales to third parties	**32,214**	**32,153**	**10,496**	**10,225**	**9,159**	**8,702**	**1,987**	**1,858**	**4,064**	**3,735**			**57,920**	**56,673**
Sales to other segments	202	277	50	56	294	279	61	44	11	18	(618)	(674)		
Net sales of segments	**32,416**	**32,430**	**10,546**	**10,281**	**9,453**	**8,981**	**2,048**	**1,902**	**4,075**	**3,753**	**(618)**	**(674)**	**57,920**	**56,673**
Other revenues	497	471	27	53	18	12	333	331	36	26		(5)	911	888
Cost of goods sold	(6,655)	(6,578)	(4,900)	(4,618)	(5,476)	(5,126)	(1,578)	(1,478)	(1,751)	(1,729)	752	773	(19,608)	(18,756)
Gross profit	**26,258**	**26,323**	**5,673**	**5,716**	**3,995**	**3,867**	**803**	**755**	**2,360**	**2,050**	**134**	**94**	**39,223**	**38,805**
Marketing & Sales	(8,514)	(8,568)	(2,452)	(2,462)	(1,672)	(1,561)	(334)	(324)	(1,577)	(1,442)		4	(14,549)	(14,353)
Research & Development	(7,242)	(6,918)	(1,042)	(975)	(787)	(695)	(476)	(453)	(305)	(291)			(9,852)	(9,332)
General & Administration	(1,051)	(1,061)	(589)	(510)	(374)	(350)	(140)	(136)	(316)	(271)	(590)	(609)	(3,060)	(2,937)
Other income	699	577	79	49	106	74	70	23	79	75	334	251	1,367	1,049
Other expense	(774)	(755)	(437)	(353)	(240)	(244)	(88)	(115)	(63)	(73)	(617)	(499)	(2,219)	(2,039)
Operating income	**9,376**	**9,598**	**1,232**	**1,465**	**1,028**	**1,091**	**(165)**	**(250)**	**178**	**48**	**(739)**	**(759)**	**10,910**	**11,193**
Income from associated companies		(2)		16	2	5	1	3			597	530	600	552
Interest expense													(683)	(724)
Other financial income and expense													(92)	(96)
Income before taxes													**10,735**	**10,925**
Taxes													(1,443)	(1,542)
Group net income													**9,292**	**9,383**
Attributable to:														
Shareholders of Novartis AG													*9,175*	*9,270*
Non-controlling interests													*117*	*113*
Included in net income are:														
Interest income													34	50
Depreciation of property, plant & equipment	(822)	(825)	(319)	(305)	(307)	(287)	(150)	(135)	(47)	(47)	(110)	(105)	(1,755)	(1,704)
Amortization of intangible assets	(284)	(324)	(1,999)	(1,926)	(411)	(368)	(222)	(215)	(56)	(57)	(4)	(4)	(2,976)	(2,894)
Impairment charges on property, plant & equipment, net	(29)	(25)	(4)		3	(3)	(1)	(6)	(32)	(3)	(17)	(2)	(80)	(39)
Impairment charges on intangible assets, net	(29)	(211)	(57)	(17)	(20)	(43)		(5)	(8)	(7)			(114)	(283)
Impairment charges on financial assets	(16)	(2)					(7)	(1)			(42)	(31)	(65)	(34)
Additions to restructuring provisions	(88)	(190)	(71)	(23)	(3)	(28)		(4)	(12)	(24)	(1)	(12)	(175)	(281)
Equity-based compensation of Novartis and Alcon equity plans	(610)	(641)	(105)	(113)	(38)	(41)	(39)	(37)	(56)	(45)	(139)	(126)	(987)	(1,003)
Total assets	**26,633**	**24,956**	**43,761**	**45,166**	**20,144**	**19,938**	**5,656**	**5,713**	**2,634**	**2,644**	**27,426**	**25,774**	**126,254**	**124,191**
Total liabilities	(11,209)	(10,673)	(2,659)	(2,578)	(3,275)	(3,208)	(793)	(736)	(957)	(883)	(32,889)	(36,850)	(51,782)	(54,928)
Total equity	**15,424**	**14,283**	**41,102**	**42,588**	**16,869**	**16,730**	**4,863**	**4,977**	**1,677**	**1,761**	**(5,463)**	**(11,076)**	**74,472**	**69,263**
Net debt											8,796	11,607	8,796	11,607
Net operating assets	**15,424**	**14,283**	**41,102**	**42,588**	**16,869**	**16,730**	**4,863**	**4,977**	**1,677**	**1,761**	**3,333**	**531**	**83,268**	**80,870**
Included in total assets and total liabilities are:														
Total property, plant & equipment[2]	9,647	8,723	2,396	2,274	3,304	3,103	1,584	1,581	453	457	813	801	18,197	16,939
Additions to property, plant & equipment[3]	1,755	1,334	523	529	500	462	181	165	79	76	126	188	3,164	2,754
Total goodwill and intangible assets[2]	6,099	6,056	37,133	38,913	12,640	12,881	2,176	2,724	786	829	33	18	58,867	61,421
Additions to goodwill and intangible assets[3]	299	165	191	130	31	22	1	33	31	24	17	6	570	380
Total investment in associated companies	2	1			19	22	1	2			9,203	8,815	9,225	8,840
Additions to investment in associated companies	1										54	36	55	36
Total marketable securities, commodities, time deposits and derivative financial instruments											9,222	8,119	9,222	8,119
Financial debts and derivative financial instruments											18,018	19,726	18,018	19,726
Current income tax and deferred tax liabilities											9,363	9,356	9,363	9,356

(1) Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30).
(2) Excluding disposal group held for sale
(3) Excluding impact of business combinations

3. Segmentation of Key Figures 2012 and 2011 (Continued)

(In $ m)	Pharmaceuticals		Alcon		Sandoz		Vaccines and Diagnostics		Consumer Health		Corporate (including eliminations)		Total Group	
	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	Restated 2012[1]	Restated 2011[1]	Restated 2012[1]	Restated 2011[1]
Net sales to third parties	**32,153**	**32,508**	**10,225**	**9,958**	**8,702**	**9,473**	**1,858**	**1,996**	**3,735**	**4,631**			**56,673**	**58,566**
Sales to other segments	277	244	56	22	279	319	44	73	18	15	(674)	(673)		
Net sales of segments	**32,430**	**32,752**	**10,281**	**9,980**	**8,981**	**9,792**	**1,902**	**2,069**	**3,753**	**4,646**	**(674)**	**(673)**	**56,673**	**58,566**
Other revenues	471	453	53	43	12	9	331	295	26	24	(5)	(15)	888	809
Cost of Goods Sold	(6,578)	(6,573)	(4,618)	(4,566)	(5,126)	(5,445)	(1,478)	(1,410)	(1,729)	(1,735)	773	746	(18,756)	(18,983)
Gross profit	**26,323**	**26,632**	**5,716**	**5,457**	**3,867**	**4,356**	**755**	**954**	**2,050**	**2,935**	**94**	**58**	**38,805**	**40,392**
Marketing & Sales	(8,568)	(8,929)	(2,462)	(2,537)	(1,561)	(1,591)	(324)	(363)	(1,442)	(1,674)	4	15	(14,353)	(15,079)
Research & Development	(6,918)	(7,232)	(975)	(892)	(695)	(640)	(453)	(523)	(291)	(296)			(9,332)	(9,583)
General & Administration	(1,061)	(1,047)	(510)	(509)	(350)	(369)	(136)	(150)	(271)	(291)	(609)	(604)	(2,937)	(2,970)
Other income	577	697	49	262	74	88	23	18	75	91	251	36	1,049	1,192
Other expense	(755)	(1,825)	(353)	(309)	(244)	(422)	(115)	(185)	(73)	(38)	(499)	(393)	(2,039)	(3,172)
Operating income	**9,598**	**8,296**	**1,465**	**1,472**	**1,091**	**1,422**	**(250)**	**(249)**	**48**	**727**	**(759)**	**(888)**	**11,193**	**10,780**
Income from associated companies	(2)	(3)	16		5	4	3	2			530	525	552	528
Interest expense													(724)	(751)
Other financial income and expense													(96)	(2)
Income before taxes													**10,925**	**10,555**
Taxes													(1,542)	(1,483)
Group net income													**9,383**	**9,072**
Attributable to:														
Shareholders of Novartis AG													*9,270*	*8,940*
Non-controlling interests													*113*	*132*
Included in net income are:														
Interest income													50	62
Depreciation of property, plant & equipment	(825)	(870)	(305)	(306)	(287)	(303)	(135)	(115)	(47)	(50)	(105)	(84)	(1,704)	(1,728)
Amortization of intangible assets	(324)	(423)	(1,926)	(1,928)	(368)	(383)	(215)	(231)	(57)	(59)	(4)	(4)	(2,894)	(3,028)
Impairment charges on property, plant & equipment	(25)	(403)		(5)	(3)	(1)	(6)	(2)	(3)	(2)	(2)		(39)	(413)
Impairment charges on intangible assets	(211)	(552)	(17)	(20)	(43)	(25)	(5)	(8)	(7)	(14)			(283)	(619)
Impairment charges on financial assets	(2)	(30)		(4)			(1)	(135)			(31)	(23)	(34)	(192)
Additions to restructuring provisions	(190)	(265)	(23)	(74)	(28)		(4)		(24)	(7)	(12)		(281)	(346)
Equity-based compensation of Novartis and Alcon equity plans	(641)	(648)	(113)	(113)	(41)	(33)	(37)	(38)	(45)	(61)	(126)	(122)	(1,003)	(1,015)
Total assets	**24,956**	**24,111**	**45,166**	**46,065**	**19,938**	**17,965**	**5,713**	**5,764**	**2,644**	**2,684**	**25,774**	**20,879**	**124,191**	**117,468**
Total liabilities	(10,673)	(10,415)	(2,578)	(2,273)	(3,208)	(2,742)	(736)	(697)	(883)	(960)	(36,850)	(34,469)	(54,928)	(51,556)
Total equity	**14,283**	**13,696**	**42,588**	**43,792**	**16,730**	**15,223**	**4,977**	**5,067**	**1,761**	**1,724**	**(11,076)**	**(13,590)**	**69,263**	**65,912**
Net debt											11,607	15,154	11,607	15,154
Net operating assets	**14,283**	**13,696**	**42,588**	**43,792**	**16,730**	**15,223**	**4,977**	**5,067**	**1,761**	**1,724**	**531**	**1,564**	**80,870**	**81,066**
Included in total assets and total liabilities are:														
Total property, plant & equipment	8,723	8,071	2,274	2,056	3,103	2,824	1,581	1,535	457	431	801	710	16,939	15,627
Additions to property, plant & equipment[2]	1,334	1,041	529	354	462	335	165	192	76	74	188	190	2,754	2,186
Total goodwill and intangible assets	6,056	6,244	38,913	40,542	12,881	11,356	2,724	2,883	829	867	18	20	61,421	61,912
Additions to goodwill and intangible assets[2]	165	219	130	80	22	24	33	6	24	4	6	3	380	336
Total investment in associated companies	1	3		18	22	18	2	4			8,815	8,579	8,840	8,622
Additions to investment in associated companies		5		3							36	24	36	32
Cash, marketable securities and derivative financial instruments											8,119	5,075	8,119	5,075
Financial debts and derivative financial instruments											19,726	20,229	19,726	20,229
Current income tax and deferred tax liabilities											9,356	8,467	9,356	8,467

(1) Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30).
(2) Excluding impact of business combinations

3. Segmentation of Key Figures 2013, 2012 and 2011 (Continued)

The following countries accounted for more than 5% of at least one of the respective Group totals for the years ended December 31, 2013, 2012 and 2011:

	Net sales[1]						Total of selected non-current assets[2]					
Country	**2013**	**%**	**2012**	**%**	**2011**	**%**	**2013**	**%**	**2012**	**%**	**2011**	**%**
$ m												
Switzerland	735	1	706	1	726	1	37,337	43	37,579	43	38,827	45
United States	18,924	33	18,592	33	19,225	33	30,894	36	31,559	36	30,061	35
Germany	4,090	7	3,797	7	4,362	7	4,323	5	4,242	5	4,214	5
Japan	4,516	8	5,361	9	5,281	9	150		188		204	
France	2,951	5	2,709	5	2,848	5	309		301		299	
Other	26,704	46	25,508	45	26,124	45	13,779	16	13,331	16	12,556	15
Group	**57,920**	**100**	**56,673**	**100**	**58,566**	**100**	**86,792**	**100**	**87,200**	**100**	**86,161**	**100**
Less assets of disposal group held for sale							(503)					
Group excluding disposal group	**57,920**		**56,673**		**58,566**		**86,289**		**87,200**		**86,161**	
Europe	21,078	36	19,708	35	21,507	37	50,582	58	50,566	58	51,101	59
Americas	24,257	42	24,029	42	24,705	42	33,894	39	34,611	40	33,211	39
Asia/Africa/Australasia	12,585	22	12,936	23	12,354	21	2,316	3	2,023	2	1,849	2
Group	**57,920**	**100**	**56,673**	**100**	**58,566**	**100**	**86,792**	**100**	**87,200**	**100**	**86,161**	**100**
Less assets of disposal group held for sale							(503)					
Group excluding disposal group	**57,920**		**56,673**		**58,566**		**86,289**		**87,200**		**86,161**	

(1) Net sales from operations by location of third party customer.

(2) Total of property, plant and equipment, goodwill, intangible assets and investment in associated companies

The Group's largest customer accounts for approximately 10% of net sales, and the second and third largest customers account for 9% and 7% of net sales (2012: 10%, 9% and 8%; 2011: 9%, 7% and 7% 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 9%, 7% and 5%, respectively, of the Group's trade receivables at December 31, 2013 (2012: 8%, 7% and 6%; 2011: 10%, 6% and 6% respectively).

3. Segmentation of Key Figures 2013, 2012 and 2011 (Continued)

Pharmaceuticals Business Franchise Net Sales

Business Franchise	2013	2012	Change (2013 to 2012)	2011	Change (2012 to 2011)
	$ m	$ m	$ %	$ m	$ %
Primary Care					
Hypertension medicines					
Diovan	3,524	4,417	(20)	5,665	(22)
Exforge	1,456	1,352	8	1,209	12
Subtotal Valsartan Group	**4,980**	**5,769**	**(14)**	**6,874**	**(16)**
Tekturna/Rasilez	290	383	(24)	557	(31)
Subtotal Hypertension	**5,270**	**6,152**	**(14)**	**7,431**	**(17)**
Arcapta Neohaler/Onbrez Breezhaler	192	134	43	103	30
Seebri Breezhaler	58	3	nm		nm
Ultibro Breezhaler	6		nm		nm
Subtotal Q Family	**256**	**137**	**87**	**103**	**33**
Galvus	1,200	910	32	677	34
Xolair	613	504	22	478	5
Total strategic franchise products	**7,339**	**7,703**	**(5)**	**8,689**	**(11)**
Established medicines	1,352	1,532	(12)	1,795	(15)
Total Primary Care products	**8,691**	**9,235**	**(6)**	**10,484**	**(12)**
Oncology					
Gleevec/Glivec	4,693	4,675	0	4,659	0
Tasigna	1,266	998	27	716	39
Subtotal Bcr-Abl franchise	**5,959**	**5,673**	**5**	**5,375**	**6**
Sandostatin	1,589	1,512	5	1,443	5
Afinitor/Votubia	1,309	797	64	443	80
Exjade	893	870	3	850	2
Zometa	600	1,288	(53)	1,487	(13)
Femara	384	438	(12)	911	(52)
Jakavi	163	30	nm	2	nm
Proleukin	91	59	54	62	5
Other	228	257	(11)	256	nm
Total Oncology products	**11,216**	**10,924**	**3**	**10,829**	**1**
Specialty—Neuroscience					
Gilenya	1,934	1,195	62	494	nm
Exelon/Exelon Patch	1,032	1,050	(2)	1,067	(2)
Comtan/Stalevo	401	530	(24)	614	(14)
Extavia	159	159	0	154	3
Other	78	62	26	46	35
Total strategic franchise products	**3,604**	**2,996**	**20**	**2,375**	**26**
Established medicines	444	483	(8)	547	(12)
Total Neuroscience products	**4,048**	**3,479**	**16**	**2,922**	**19**

nm—not meaningful.

3. Segmentation of Key Figures 2013, 2012 and 2011 (Continued)

Business Franchise	2013	2012	Change (2013 to 2012)	2011	Change (2012 to 2011)
	$ m	$ m	$ %	$ m	$ %
Specialty—Ophthalmics					
Lucentis	2,383	2,398	(1)	2,050	17
Other	61	88	(31)	113	(22)
Total Ophthalmics products	**2,444**	**2,486**	**(2)**	**2,163**	**15**
Specialty—Integrated Hospital Care (IHC)[1]					
Neoral/Sandimmun	750	821	(9)	903	(9)
Myfortic	637	579	10	518	12
Zortress/Certican	249	210	19	187	12
Ilaris	119	72	65	48	50
Other	429	398	8	363	10
Total strategic franchise products	**2,184**	**2,080**	**5**	**2,019**	**3**
Everolimus stent drug	247	256	(4)	256	0
Established medicines	852	1,160	(27)	1,220	(5)
Total IHC products	**3,283**	**3,496**	**(6)**	**3,495**	**0**
Specialty—Critical Care					
TOBI	387	317	22	296	7
Total Critical Care products	**387**	**317**	**22**	**296**	**(59)**
Established medicines—additional products					
Voltaren (excl. other divisions)	675	759	(11)	794	(4)
Ritalin/Focalin	594	554	7	550	1
Tegretol	342	348	(2)	364	(4)
Trileptal	257	279	(8)	263	6
Foradil	205	240	(15)	312	(23)
Other	72	36	100	36	0
Total additional products	**2,145**	**2,216**	**(3)**	**2,319**	**(4)**
Total strategic franchise products	**27,174**	**26,506**	**3**	**26,371**	**1**
Total established medicines and additional products	5,040	5,647	(11)	6,137	(8)
Total Division net sales	**32,214**	**32,153**	**0**	**32,508**	**(1)**

nm—not meaningful.

[1] Includes Transplantation

The product portfolio of other segments is widely spread in 2013, 2012 and 2011.

4. Associated Companies

Novartis has a significant investment in Roche Holding AG, Basel (Roche) and certain other smaller investments which are accounted for as associated companies:

	Balance sheet value		Net income statement effect		
	2013	2012	2013	2012	2011
	$ m	$ m	$ m	$ m	$ m
Roche Holding AG, Switzerland	8,982	8,588	604	538	499
Others	243	252	(4)	14	29
Total	**9,225**	**8,840**	**600**	**552**	**528**

	Other comprehensive income effect			Total comprehensive income effect		
	2013	2012	2011	2013	2012	2011
	$ m	$ m	$ m	$ m	$ m	$ m
Roche Holding AG, Switzerland	(37)	(152)	85	567	386	584
Others	5	(2)	(2)	1	12	27
Total	**(32)**	**(154)**	**83**	**568**	**398**	**611**

Roche Holding AG

The Group's holding in Roche voting shares was 33.3% at December 31, 2013, 2012 and 2011. This investment represents approximately 6.3% of Roche's total outstanding voting and non-voting equity instruments at December 31, 2013 (2012: 6.4%, and 2011: 6.3%).

Since up-to-date financial data for Roche are not available when Novartis produces its consolidated financial results, a survey of analyst estimates is used to estimate the Group's share of Roche's net income. Any differences between these estimates and actual results will be adjusted in the Group's 2014 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, 2012 and for the six months ended June 30, 2013 since full year 2013 data is not yet available:

	Current assets	Non-current assets	Current liabilities	Non-current liabilities
	CHF billions	CHF billions	CHF billions	CHF billions
December 31, 2012	31.4	58.2	20.2	27.9
June 30, 2013	25.7	57.1	16.2	27.1

4. Associated Companies (Continued)

	Revenue	Net income	Other comprehensive income	Total comprehensive income
	CHF billions	CHF billions	CHF billions	CHF billions
December 31, 2012	47.4	6.9	(1.9)	5.0
June 30, 2013	24.3	4.6	(0.2)	4.4

A purchase price allocation was performed on the basis of publicly available information at the time of acquisition of the investment. The December 31, 2013 balance sheet value allocation is as follows:

	$ m
Novartis share of Roche's estimated net assets	2,793
Novartis share of re-appraised intangible assets	1,571
Implicit Novartis goodwill	3,200
Current value of share in net identifiable assets and goodwill	**7,564**
Accumulated equity accounting adjustments and translation effects less dividends received	1,418
December 31, 2013 balance sheet value	**8,982**

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 2013, dividends received from Roche in relation to the distribution of its 2012 net income amounted to $413 million (2012: $396 million in relation with the distribution of its 2011 net income).

The consolidated income statement effects from applying Novartis accounting principles for this investment in 2013, 2012 and 2011 are as follows:

	2013	2012	2011
	$ m	$ m	$ m
Novartis share of Roche's estimated current-year consolidated net income	817	709	702
Prior-year adjustment	(59)	(18)	(41)
Amortization of fair value adjustments relating to intangible assets, net of taxes of $45 million (2012: $45 million, 2011: $47 million)	(154)	(153)	(162)
Net income effect	**604**	**538**	**499**

The publicly quoted market value of the Novartis interest in Roche (Reuters symbol: RO.S) at December 31, 2013, was $14.8 billion (2012: $10.9 billion).

5. Interest Expense and Other Financial Income and Expense

Interest Expense

	2013	2012	2011
	$ m	$ m	$ m
Interest expense	(664)	(655)	(699)
Expense due to discounting long-term liabilities	(19)	(69)	(52)
Total interest expense	**(683)**	**(724)**	**(751)**

Other Financial Income and Expense

	2013	2012	2011
	$ m	$ m	$ m
Interest income	34	50	62
Dividend income	1	1	1
Net capital gains/(losses) on available-for-sale securities	28	(6)	2
Net capital (losses)/gains on cash and cash equivalents	(1)	47	(124)
Income on forward contracts and options	2	86	192
Expenses on forward contracts and options		(129)	(67)
Impairment of commodities and available-for-sale securities	(14)		(3)
Other financial expense	(20)	(20)	(19)
Monetary loss from hyperinflation accounting	(32)	(19)	(19)
Currency result, net	(90)	(106)	(27)
Total other financial income and expense	**(92)**	**(96)**	**(2)**

6. Taxes

Income Before Taxes

	2013	Restated 2012[1]	Restated 2011[1]
	$ m	$ m	$ m
Switzerland	5,516	5,059	2,812
Foreign	5,219	5,866	7,743
Total income before taxes	**10,735**	**10,925**	**10,555**

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30)

6. Taxes (Continued)

Current and Deferred Income Tax Expense

	2013	Restated 2012[1]	Restated 2011[1]
	$ m	$ m	$ m
Switzerland	(507)	(530)	(488)
Foreign	(1,764)	(1,806)	(2,182)
Total current income tax expense	**(2,271)**	**(2,336)**	**(2,670)**
Switzerland	157	267	201
Foreign	671	527	986
Total deferred tax income	**828**	**794**	**1,187**
Total income tax expense	**(1,443)**	**(1,542)**	**(1,483)**

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30)

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:

	2013	Restated 2012[1]	Restated 2011[1]
	%	%	%
Expected tax rate	12.1	13.3	15.4
Effect of disallowed expenditures	3.5	2.9	2.5
Effect of utilization of tax losses brought forward from prior periods	(0.1)	(0.1)	(0.1)
Effect of income taxed at reduced rates	(0.1)	(0.3)	
Effect of tax credits and allowances	(2.0)	(1.7)	(2.4)
Effect of write-off of deferred tax assets	0.3		
Effect of tax rate change on opening balance	(0.2)		
Effect of tax benefits expiring in 2017	(0.7)	(0.8)	(0.7)
Effect of write-down of investments in subsidiaries			(0.5)
Prior year and other items	0.6	0.8	(0.1)
Effective tax rate	**13.4**	**14.1**	**14.1**

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30)

The utilization of tax-loss carry-forwards lowered the tax charge by $13 million, $11 million and $6 million in 2013, 2012 and 2011 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.

	2013	Restated 2012[1]	Restated 2011[1]
Basic earnings per share			
Weighted average number of shares outstanding (in millions)	2,441	2,418	2,382
Net income attributable to shareholders of Novartis AG ($ m)	**9,175**	**9,270**	**8,940**
Basic earnings per share ($)	**3.76**	**3.83**	**3.75**

(1) Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30)

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.

	2013	Restated 2012[1]	Restated 2011[1]
Diluted earnings per share			
Weighted average number of shares outstanding (in millions)	2,441	2,418	2,382
Adjustment for vesting of restricted shares and dilutive shares from options (in millions)	38	27	31
Weighted average number of shares for diluted earnings per share (in millions)	2,479	2,445	2,413
Net income attributable to shareholders of Novartis AG ($ m)	**9,175**	**9,270**	**8,940**
Diluted earnings per share ($)	**3.70**	**3.79**	**3.70**

(1) Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30)

In 2013, no options (2012: options equivalent to 77.2 million shares, 2011: options equivalent to 78.0 million shares) were excluded from the calculation of diluted EPS as all options were dilutive.

8. Changes in Consolidated Statements of Comprehensive income

The consolidated statements of comprehensive income include the Group's net income for the year as well as all other valuation adjustments recorded in the Group's consolidated balance sheet but which under IFRS are not recorded in the consolidated income statement. These include fair value adjustments to financial instruments, actuarial gains or losses on defined benefit pension and other post-employment plans and currency translation effects, net of tax.

These amounts are subject to significant volatility outside of the control of management due to such factors as share price, foreign currency and interest rate movements.

Up to December 31, 2009 the applicable accounting standard required revaluations of previously held equity interests to be recognized in the consolidated statement of comprehensive income. Since January 1,

8. Changes in Consolidated Statements of Comprehensive income (Continued)

2010 such revaluations need to be recorded in the consolidated income statement. As no further amounts will be recognized in other comprehensive income, the cumulative amounts previously recorded in this separate reserve have been transferred to consolidated retained earnings as of January 1, 2011.

Furthermore, as part of the implementation of revised IAS 19 on *Employee Benefits*, a retroactive restatement of consolidated retained earnings and reserve for actuarial losses from defined benefit plans has been recognized as explained in more detail in Note 30.

The following table summarizes these value adjustments and currency translation effects attributable to Novartis shareholders:

	Fair value adjustments on marketable securities	Fair value adjustments on deferred cash flow hedges	Actuarial losses from defined benefit plans	Revaluation of previously held equity interests	Cumulative currency translation effects	Total value adjustments
	$ m	$ m	$ m	$ m	$ m	$ m
Value adjustments at January 1, 2011—published	**158**	**(182)**	**(3,238)**	**685**	**3,669**	**1,092**
Reclassification of revaluation of previoulsy held equity interest to retained earnings				(685)		(685)
Value adjustments at January 1, 2011—restated	**158**	**(182)**	**(3,238)**		**3,669**	**407**
Fair value adjustments on financial instruments	(21)	41				20
Net actuarial losses from defined benefit plans[1]			(1,229)			(1,229)
Currency translation effects					(534)	(534)
Total value adjustments in 2011	**(21)**	**41**	**(1,229)**		**(534)**	**(1,743)**
Value adjustments at December 31, 2011	**137**	**(141)**	**(4,467)**		**3,135**	**(1,336)**
Fair value adjustments on financial instruments	75	41				116
Net actuarial losses from defined benefit plans[1]			(1,581)			(1,581)
Currency translation effects					809	809
Total value adjustments in 2012	**75**	**41**	**(1,581)**		**809**	**(656)**
Value adjustments at December 31, 2012	**212**	**(100)**	**(6,048)**		**3,944**	**(1,992)**
Fair value adjustments on financial instruments	132	41				173
Net actuarial gains from defined benefit plans			1,504			1,504
Currency translation effects					681	681
Total value adjustments in 2013	**132**	**41**	**1,504**		**681**	**2,358**
Value adjustments at December 31, 2013	**344**	**(59)**	**(4,544)**		**4,625**	**366**

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30).

8. Changes in Consolidated Statements of Comprehensive income (Continued)

8.1) The 2013, 2012 and 2011 changes in the fair value of financial instruments were as follows:

	Fair value adjustments on marketable securities	Fair value adjustments on deferred cash flow hedges	Total
	$ m	$ m	$ m
Fair value adjustments at January 1, 2013	**212**	**(100)**	**112**
Changes in fair value:			
—Available-for-sale marketable securities	3		3
—Available-for-sale financial investments	204		204
—Associated companies' movements in comprehensive income	7		7
Realized net gains transferred to the consolidated income statement:			
—Marketable securities sold	(46)		(46)
—Other financial assets sold	(74)		(74)
Amortized net losses on cash flow hedges transferred to the consolidated income statement		44	44
Impaired financial assets transferred to the consolidated income statement	65		65
Deferred tax on above items	(27)	(3)	(30)
Fair value adjustments during the year	**132**	**41**	**173**
Attributable to Shareholders of Novartis AG	*132*	*41*	*173*
Fair value adjustments at December 31, 2013	**344**	**(59)**	**285**

8. Changes in Consolidated Statements of Comprehensive income (Continued)

	Fair value adjustments on marketable securities	Fair value adjustments on deferred cash flow hedges	Total
	$ m	$ m	$ m
Fair value adjustments at January 1, 2012	**137**	**(141)**	**(4)**
Changes in fair value:			
—Available-for-sale marketable securities	20		20
—Available-for-sale financial investments	41		41
—Associated companies' movements in comprehensive income	5		5
Realized net losses/(gains) transferred to the consolidated income statement:			
—Marketable securities sold	3		3
—Other financial assets sold	(19)		(19)
Amortized net losses on cash flow hedges transferred to the consolidated income statement		44	44
Impaired marketable securities and other financial assets transferred to the consolidated income statement	35		35
Deferred tax on above items	(10)	(3)	(13)
Fair value adjustments during the year	**75**	**41**	**116**
Attributable to Shareholders of Novartis AG	*75*	*41*	*116*
Fair value adjustments at December 31, 2012	**212**	**(100)**	**112**

8. Changes in Consolidated Statements of Comprehensive income (Continued)

	Fair value adjustments on marketable securities	Fair value adjustments on deferred cash flow hedges	Total
	$ m	$ m	$ m
Fair value adjustments at January 1, 2011	**157**	**(182)**	**(25)**
Changes in fair value:			
—Available-for-sale marketable securities	(32)		(32)
—Available-for-sale financial investments	(141)		(141)
—Associated companies' movements in comprehensive income	(8)		(8)
Realized net (gains) transferred to the consolidated income statement:			
—Marketable securities sold	(13)		(13)
—Other financial assets sold	(13)		(13)
Amortized net losses on cash flow hedges transferred to the consolidated income statement		44	44
Impaired marketable securities and other financial assets transferred to the consolidated income statement	192		192
Deferred tax on above items	(5)	(3)	(8)
Fair value adjustments during the year	**(20)**	**41**	**21**
Attributable to:			
Shareholders of Novartis AG	*(21)*	*41*	*20*
Non-controlling interests	*1*		*1*
Fair value adjustments at December 31, 2011	**137**	**(141)**	**(4)**

8.2) The Group has investments in associated companies, principally Roche Holding AG. The Group's share in movements in these companies' other comprehensive income are recognized directly in the respective categories of the Novartis consolidated statement of comprehensive income, net of tax. The currency translation effects and fair value adjustments of associated companies are included in the corresponding Group amounts. All other movements in these companies' statements of comprehensive income are recognized directly in the consolidated statement of comprehensive income under "Novartis share of other items recorded in comprehensive income recognized by associated companies, net of taxes". These amounted to an income of $5 million in 2013 (2012: loss of $107 million, 2011: income of $1 million).

8.3) Cumulative currency translation gains of $1 million have been transferred into financial income in 2013 as a result of the liquidation of a subsidiary (2012: $6 million, 2011: nil). Currency translation losses of associated companies of $43 million were recognized in 2013 (2012: loss of $52 million, 2011: gain of $90 million).

8. Changes in Consolidated Statements of Comprehensive Income (Continued)

8.4) Remeasurements from defined benefit plans arise as follows:

	2013	Restated 2012[1]	Restated 2011[1]
	$ m	$ m	$ m
Defined benefit pension plans before tax	1,977	(2,066)	(1,618)
Other post-employment benefit plans before tax	163	32	(53)
Taxation on above items	(636)	453	450
Total after tax	**1,504**	**(1,581)**	**(1,221)**
Attributable to:			
Shareholders of Novartis AG	*1,504*	*(1,581)*	*(1,229)*
Non-controlling interests			*8*

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30)

9. Changes in Consolidated Equity

9.1) As of January 1, 2011, Novartis has changed its presentation policy to include share premium arising from share transactions in consolidated retained earnings.

9.2) A dividend of CHF 2.30 per share was approved at the 2013 Annual General meeting for the year ended December 31, 2012, resulting in a total dividend payment of $6.1 billion in 2013 (2012: the CHF 2.25 per share dividend amounted to $6.0 billion, 2011: CHF 2.20 per share dividend payment that amounted to $5.4 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.

9.3) Share purchases of 40.3 million shares for $3.0 billion occurred during 2013 (2012: 8.6 million shares for $505 million, 2011: 61.9 million shares for $3.6 billion). This comprises purchases of 33.3 million shares on the first trading line of the SIX Swiss Stock Exchange for $2.5 billion (2012: 4.6 million shares for $240 million, 2011: 20.4 million shares for $1.1 billion) and purchases of 4.8 million shares from employees for $356 million (2012: 4.0 million shares for $265 million, 2011: 2.1 million shares for $137 million). An additional 2.2 million shares were acquired on the second trading line for $170 million under the share buy-back announced in November 2013 and are intended for cancellation (2012: no share buy-backs, 2011: 39.4 million shares for $2.4 billion). The withholding tax on the second trading line purchases amounts to $60 million and will be paid in 2014.

9.4) There was a disposal of 34.3 million shares, mainly due to the exercise of options and delivery of treasury shares, which contributed $1.7 billion (2012: 12.0 million shares for $416 million, 2011: 7.2 million shares for $168 million). The average share price was significantly below market price due to the low strike price of the exercised options.

9.5) In 2013, no shares were cancelled. In 2012, a total of 39.4 million shares were cancelled. These shares had been repurchased via the second trading line of the SIX Swiss Exchange in 2011. In 2011, no shares were cancelled.

9. Changes in Consolidated Equity (Continued)

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 2013, 11.5 million shares were transferred to associates as part of equity-based compensation (2012: 10.6 million shares, 2011: 7.2 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) During 2013 additional interests in subsidiaries were acquired. The reduction in equity of $10 million represents the excess of the amount paid over the amount recognized for the acquired non-controlling interest (2012: nil, 2011: see **9.10)** below).

9.8) Changes in non-controlling interests in subsidiaries resulted in a reduction in consolidated equity of $109 million (2012: reduction of $82 million, 2011: reduction of $6.6 billion driven by the acquisition of the remaining outstanding non-controlling interests in Alcon, Inc.).

9.9) The excess of the consideration exchanged by Novartis to acquire the additional non-controlling interests in Alcon, Inc. over the value of the related outstanding non-controlling interests of Alcon, Inc. was recognized against consolidated equity. In 2011, this led to a reduction in equity of $5.7 billion.

9.10) In 2011, a total of 164.7 million Novartis shares with a fair value of $9.2 billion were exchanged on April 8, 2011 to acquire the outstanding non-controlling interests in Alcon, Inc. These shares consisted of 108 million newly issued shares and 56.7 million treasury shares.

10. Property, Plant & Equipment Movements

2013	Land	Buildings	Construction in progress	Machinery & other equipment	Total
	$ m	$ m	$ m	$ m	$ m
Cost					
January 1	**867**	**12,029**	**3,113**	**16,763**	**32,772**
Reclassifications[1]		1,014	(2,104)	1,090	
Additions	79	67	2,609	409	3,164
Disposals and derecognitions[2]	(2)	(171)	(21)	(648)	(842)
Currency translation effects	10	172	42	283	507
December 31	**954**	**13,111**	**3,639**	**17,897**	**35,601**
Accumulated depreciation					
January 1	**(25)**	**(5,176)**	**(10)**	**(10,622)**	**(15,833)**
Depreciation charge	(4)	(470)		(1,281)	(1,755)
Depreciation on disposals and derecognitions[2]		144		568	712
Impairment charge		(60)	(19)	(50)	(129)
Reversal of impairment charge				49	49
Currency translation effects		(94)		(209)	(303)
December 31	**(29)**	**(5,656)**	**(29)**	**(11,545)**	**(17,259)**
Net book value at December 31	**925**	**7,455**	**3,610**	**6,352**	**18,342**
Less assets of disposal group held for sale	(34)	(82)	(4)	(25)	(145)
Net book value excluding disposal group	**891**	**7,373**	**3,606**	**6,327**	**18,197**
Insured value at December 31					**38,106**
Net book value of property, plant & equipment under finance lease contracts					**3**
Commitments for purchases of property, plant & equipment					**1,021**

(1) Reclassifications between various asset categories due to completion of plant and other equipment under construction.

(2) Derecognition of assets which are no longer used and are not considered to have a significant disposal value or other alternative use.

The Group was awarded government grants in the United States for the construction of a manufacturing facility to produce flu vaccines. The contracts included a maximum of $330 million of cost reimbursement for construction activities and equipment, of which $260 million was received up to December 31, 2013 (2012: $240 million). These grants are deducted in arriving at the balance sheet carrying value of the assets since the receipt of the respective government grant is reasonably assured. There are no onerous contracts or unfulfilled conditions in connection with this grant.

10. Property, Plant & Equipment Movements (Continued)

The reversal of the impairment charge during 2013, principally relates to finding an alternative use for the previously impaired machinery and equipment initially used to manufacture aliskiren.

Borrowing costs on new additions to property, plant and equipment have been capitalized and amounted to $9 million in 2013 (2012: $4 million, 2011: $1 million).

2012	Land	Buildings	Construction in progress	Machinery & other equipment	Total
	$ m	$ m	$ m	$ m	$ m
Cost					
January 1	**831**	**11,429**	**2,164**	**15,511**	**29,935**
Impact of business combinations	10	76	12	28	126
Reclassifications[1]	11	296	(1,226)	919	
Additions	5	105	2,117	527	2,754
Disposals and derecognitions[2]	(5)	(54)	(14)	(523)	(596)
Currency translation effects	15	177	60	301	553
December 31	**867**	**12,029**	**3,113**	**16,763**	**32,772**
Accumulated depreciation					
January 1	**(22)**	**(4,646)**	**(10)**	**(9,630)**	**(14,308)**
Depreciation charge	(4)	(465)		(1,235)	(1,704)
Depreciation on disposals and derecognitions[2]	2	35		462	499
Impairment charge		(20)		(19)	(39)
Currency translation effects	(1)	(80)		(200)	(281)
December 31	**(25)**	**(5,176)**	**(10)**	**(10,622)**	**(15,833)**
Net book value at December 31	**842**	**6,853**	**3,103**	**6,141**	**16,939**
Insured value at December 31					**37,405**
Net book value of property, plant & equipment under finance lease contracts					**1**
Commitments for purchases of property, plant & equipment					**755**

(1) Reclassifications between various asset categories due to completion of plant and other equipment under construction.

(2) Derecognition of assets which are no longer used and are not considered to have a significant disposal value or other alternative use.

11. Goodwill and Intangible Asset Movements

2013	Goodwill	Acquired research & development	Alcon brand name	Technologies	Currently marketed products	Marketing know-how	Other intangible assets	Total of intangible assets other than goodwill
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Cost								
January 1	**31,605**	**2,857**	**2,980**	**7,079**	**24,412**	**5,960**	**1,303**	**44,591**
Reclassifications[1]		(447)			431		16	
Additions		251		4	170		145	570
Disposals and derecognitions[2]		(40)			(21)		(10)	(71)
Currency translation effects	216	35		21	227		25	308
December 31	**31,821**	**2,656**	**2,980**	**7,104**	**25,219**	**5,960**	**1,479**	**45,398**
Accumulated amortization								
January 1	**(515)**	**(543)**		**(1,551)**	**(10,750)**	**(476)**	**(940)**	**(14,260)**
Amortization charge				(610)	(2,018)	(239)	(109)	(2,976)
Amortization on disposals and derecognitions[2]		39			19		10	68
Impairment charge		(64)			(28)		(24)	(116)
Reversal of impairment charge					2			2
Currency translation effects	(13)	(15)		(7)	(146)		(16)	(184)
December 31	**(528)**	**(583)**		**(2,168)**	**(12,921)**	**(715)**	**(1,079)**	**(17,466)**
Net book value at December 31	**31,293**	**2,073**	**2,980**	**4,936**	**12,298**	**5,245**	**400**	**27,932**
Less assets of disposal group held for sale	(267)				(91)			(91)
Net book value excluding disposal group at December 31	**31,026**	**2,073**	**2,980**	**4,936**	**12,207**	**5,245**	**400**	**27,841**

(1) Reclassifications between various asset categories as a result of product launches of acquired In-Process Research & Development.

(2) Derecognitions of assets which are no longer used or being developed and are not considered to have a significant disposal value or other alternative use.

11. Goodwill and Intangible Asset Movements (Continued)

Segmentation of Goodwill and Intangible Assets

The net book values at December 31, 2013 of goodwill and intangible assets are allocated to the Group's reporting segments as summarized below.

	Goodwill	Acquired research & development	Alcon brand name	Technologies	Currently marketed products	Marketing know-how	Other intangible assets	Total of intangible assets other than goodwill
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Pharmaceuticals	3,154	1,213		19	1,566		147	2,945
Alcon	17,776	328	2,980	3,884	6,839	5,245	81	19,357
Sandoz	8,928	507		853	2,338		14	3,712
Vaccines and Diagnostics (excluding assets of disposal group held for sale)	933	7		180	955		101	1,243
Consumer Health	228	4			509		45	558
Corporate	7	14					12	26
Total	**31,026**	**2,073**	**2,980**	**4,936**	**12,207**	**5,245**	**400**	**27,841**
Potential impairment charge, if any, if discounted cash flows fell by 5%					6			
Potential impairment charge, if any, if discounted cash flows fell by 10%		3			14			

11. Goodwill and Intangible Asset Movements (Continued)

2012	Goodwill	Acquired research & development	Alcon brand name	Technologies	Currently marketed products	Marketing know-how	Other intangible assets	Total of intangible assets other than goodwill
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Cost								
January 1	**30,451**	**3,091**	**2,980**	**6,681**	**23,040**	**5,960**	**1,222**	**42,974**
Impact of business combinations	1,026	173		371	521			1,065
Reclassifications[1]		(574)			574			
Additions		175			136		69	380
Disposals and derecognitions[2]		(34)			(19)		(10)	(63)
Currency translation effects	128	26		27	160		22	235
December 31	**31,605**	**2,857**	**2,980**	**7,079**	**24,412**	**5,960**	**1,303**	**44,591**
Accumulated amortization								
January 1	**(508)**	**(461)**		**(950)**	**(8,535)**	**(238)**	**(821)**	**(11,005)**
Amortization charge				(590)	(1,959)	(238)	(107)	(2,894)
Amortization on disposals and derecognitions[2]		34			17		10	61
Impairment charge		(107)			(172)		(7)	(286)
Reversal of impairment charge		3						3
Currency translation effects	(7)	(12)		(11)	(101)		(15)	(139)
December 31	**(515)**	**(543)**		**(1,551)**	**(10,750)**	**(476)**	**(940)**	**(14,260)**
Net book value at December 31	**31,090**	**2,314**	**2,980**	**5,528**	**13,662**	**5,484**	**363**	**30,331**

(1) Reclassifications between various asset categories as a result of product launches of acquired In-Process Research & Development.

(2) Derecognitions of assets which are no longer used or being developed and are not considered to have a significant disposal value or other alternative use.

11. Goodwill and Intangible Asset Movements (Continued)

The recoverable amount of a cash-generating unit and related goodwill is usually based on the fair value less costs of disposal valuation method. The following assumptions are used in the calculations:

	Pharmaceuticals	Alcon	Sandoz	Vaccines and Diagnostics	Consumer Health
	%	%	%	%	%
Sales growth rate assumptions after forecast period	1.5	3	0 to 2	0.5	0
Discount rate (post-tax)	6	6	6	6	6

In 2013, intangible asset impairment charges of $116 million were recognized. These relate to impairment charges of $57 million in the Alcon Division and $59 million in all other divisions.

In 2012, intangible asset impairment charges of $286 million were recognized. These relate to impairment charges of $211 million in the Pharmaceuticals Division and $75 million in all other divisions.

In 2011, intangible asset impairment charges of $627 million were recorded. $552 million of these arose in the Pharmaceuticals Division, principally due to the expected reduction in demand for *Tekturna*/*Rasilez* (aliskiren) and discontinuation of PRT128 (elinogrel), SMC021 (oral calcitonin), PTK796 and AGO178 (agomelatine) development programs. $75 million of impairment charges arose in all other Divisions.

12. Deferred Tax Assets and Liabilities

	Property, plant & equipment	Intangible assets	Pensions and other benefit obligations of associates	Inventories	Tax loss carryforwards	Other assets, provisions and accruals	Valuation allowance	Total
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Gross deferred tax assets at January 1, 2013	**163**	**301**	**2,113**	**2,689**	**215**	**2,258**	**(11)**	**7,728**
Gross deferred tax liabilities at January 1, 2013	**(950)**	**(5,260)**	**(429)**	**(447)**	**(16)**	**(547)**		**(7,649)**
Net deferred tax balance at January 1, 2013	**(787)**	**(4,959)**	**1,684**	**2,242**	**199**	**1,711**	**(11)**	**79**
At January 1, 2013	**(787)**	**(4,959)**	**1,684**	**2,242**	**199**	**1,711**	**(11)**	**79**
Credited/(charged) to income	96	462	16	293	(56)	21	(4)	828
Credited to equity						311		311
Charged to other comprehensive income			(636)			(30)		(666)
Other movements	(36)	(29)	3	(23)	(2)	16	(7)	(78)
Net deferred tax balance at December 31, 2013	**(727)**	**(4,526)**	**1,067**	**2,512**	**141**	**2,029**	**(22)**	**474**
Less deferred tax assets of disposal group held for sale					(3)			(3)
Net deferred tax balance at December 31, 2013 without disposal group	**(727)**	**(4,526)**	**1,067**	**2,512**	**138**	**2,029**	**(22)**	**471**
Gross deferred tax assets at December 31, 2013 without disposal group	**159**	**270**	**1,515**	**3,026**	**142**	**2,651**	**(22)**	**7,741**
Gross deferred tax liabilities at December 31, 2013	**(886)**	**(4,796)**	**(448)**	**(514)**	**(4)**	**(622)**		**(7,270)**
Net deferred tax balance at December 31, 2013 without disposal group	**(727)**	**(4,526)**	**1,067**	**2,512**	**138**	**2,029**	**(22)**	**471**
After offsetting $366 million of deferred tax assets and liabilities within the same tax jurisdiction the balance amounts to:								
Deferred tax assets at December 31, 2013 without disposal group								**7,375**
Deferred tax liabilities at December 31, 2013								**(6,904)**
Net deferred tax balance at December 31, 2013 without disposal group								**471**
Gross deferred tax assets at January 1, 2012[1]	**157**	**234**	**1,548**	**2,020**	**201**	**2,221**	**(32)**	**6,349**
Gross deferred tax liabilities at January 1, 2012[1]	**(947)**	**(5,168)**	**(373)**	**(225)**	**(13)**	**(555)**		**(7,281)**
Net deferred tax balance at January 1, 2012[1]	**(790)**	**(4,934)**	**1,175**	**1,795**	**188**	**1,666**	**(32)**	**(932)**
At January 1, 2012	**(790)**	**(4,934)**	**1,175**	**1,795**	**188**	**1,666**	**(32)**	**(932)**
Credited/(charged) to income	16	347	56	464	12	(100)	(1)	794
Credited to equity						49		49
Credited/(charged) to other comprehensive income[1]			453			(11)		442
Impact of business combinations	(3)	(326)	29	(6)	5	71		(230)
Other movements	(10)	(46)	(29)	(11)	(6)	36	22	(44)
Net deferred tax balance at December 31, 2012	**(787)**	**(4,959)**	**1,684**	**2,242**	**199**	**1,711**	**(11)**	**79**
Gross deferred tax assets at December 31, 2012	**163**	**301**	**2,113**	**2,689**	**215**	**2,258**	**(11)**	**7,728**
Gross deferred tax liabilities at December 31, 2012	**(950)**	**(5,260)**	**(429)**	**(447)**	**(16)**	**(547)**		**(7,649)**
Net deferred tax balance at December 31, 2012	**(787)**	**(4,959)**	**1,684**	**2,242**	**199**	**1,711**	**(11)**	**79**
After offsetting $363 million of deferred tax assets and liabilities within the same tax jurisdiction the balance amounts to:								
Deferred tax assets at December 31, 2012								**7,365**
Deferred tax liabilities at December 31, 2012								**(7,286)**
Net deferred tax balance at December 31, 2012								**79**

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30)

A reversal of valuation allowances could occur when circumstances make the realization of deferred taxes probable. This would result in a decrease in the Group's effective tax rate.

Deferred tax assets of $3.2 billion (2012: $3.3 billion) and deferred tax liabilities of $6.4 billion (2012: $6.9 billion) are expected to have an impact on current taxes payable after more than twelve months.

12. Deferred Tax Assets and Liabilities (Continued)

At December 31, 2013, unremitted earnings of $48 billion (2012: $45 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.

	2013	2012
	$ m	$ m
Temporary differences on which no deferred tax has been provided as they are permanent in nature related to:		
—Investments in subsidiaries	6,818	5,777
—Goodwill from acquisitions	(30,279)	(26,097)

The gross value of tax-loss carry-forwards that have, or have not, been capitalized as deferred tax assets, with their expiry dates is as follows:

	Not capitalized	Capitalized	2013 total
	$ m	$ m	$ m
One year	175	21	196
Two years	50	16	66
Three years	31	32	63
Four years	106	16	122
Five years	49	42	91
More than five years	936	581	1,517
Total	**1,347**	**708**	**2,055**

In 2013, $181 million (2012: $75 million, 2011: $155 million) of tax-loss carry-forwards expired.

	Not capitalized	Capitalized	2012 total
	$ m	$ m	$ m
One year	178	28	206
Two years	175	23	198
Three years	76	61	137
Four years	78	26	104
Five years	116	32	148
More than five years	268	1,010	1,278
Total	**891**	**1,180**	**2,071**

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

	2013	2012
	$ m	$ m
Available-for-sale long-term financial investments	876	674
Long-term loans and receivables, advances and security deposits	654	443
Total financial assets	**1,530**	**1,117**
Less financial assets of disposal group held for sale	(7)	
Total financial assets excluding disposal group	**1,523**	**1,117**

Other Non-Current Assets

	2013	2012
	$ m	$ m
Deferred compensation plans	375	315
Prepaid post-employment benefit plans	42	55
Other non-current assets	108	135
Total other non-current assets	**525**	**505**

14. Inventories

	2013	2012
	$ m	$ m
Raw material, consumables	954	955
Finished products	6,400	5,789
Total inventories	**7,354**	**6,744**
Less assets of disposal group held for sale	(87)	
Total inventories excluding disposal group	**7,267**	**6,744**

14. Inventories (Continued)

The amount of inventory recognized as an expense in "Cost of goods sold" in the consolidated income statements during 2013 amounted to $13.7 billion (2012: $12.9 billion, 2011: $13.1 billion).

The following summarizes movements in inventory write-downs deducted from inventory categories. Reversals of inventory provisions 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.

	2013	2012	2011
	$ m	$ m	$ m
January 1	**(904)**	**(741)**	**(879)**
Impact of business combinations		(19)	
Inventory write-downs charged to the consolidated income statement	(1,439)	(1,430)	(1,554)
Utilization of inventory provisions	882	585	921
Reversal of inventory provisions	474	723	738
Currency translation effects	3	(22)	33
December 31	**(984)**	**(904)**	**(741)**

15. Trade Receivables

	2013	2012
	$ m	$ m
Total gross trade receivables	10,252	10,268
Provisions for doubtful trade receivables	(196)	(217)
Total trade receivables, net	**10,056**	**10,051**
Less assets of disposal group held for sale	(154)	
Total trade receivables excluding disposal group, net	**9,902**	**10,051**

The following table summarizes the movement in the provision for doubtful trade receivables:

	2013	2012	2011
	$ m	$ m	$ m
January 1	**(217)**	**(219)**	**(221)**
Impact of business combinations		(1)	(9)
Provisions for doubtful trade receivables charged to the consolidated income statement	(98)	(107)	(116)
Utilization or reversal of provisions for doubtful trade receivables	120	111	121
Currency translation effects	(1)	(1)	6
December 31	**(196)**	**(217)**	**(219)**

15. Trade Receivables (Continued)

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:

	2013	2012
	$ m	$ m
Not overdue	8,650	8,584
Past due for not more than one month	509	552
Past due for more than one month but less than three months	303	321
Past due for more than three months but less than six months	259	301
Past due for more than six months but less than one year	263	205
Past due for more than one year	268	305
Provisions for doubtful trade receivables	(196)	(217)
Total trade receivables, net	**10,056**	**10,051**
Less assets of disposal group held for sale	(154)	
Total trade receivables excluding disposal group, net	**9,902**	**10,051**

Trade receivable balances include sales to drug wholesalers, retailers, private health systems, government agencies, managed care providers, pharmacy benefit managers and government-supported healthcare systems. Novartis continues to monitor sovereign debt issues and economic conditions in Greece, Italy, Portugal, Spain (GIPS) and other countries and evaluates trade receivables in these countries for potential collection risks. Substantially all of the trade receivables from such countries are due directly from local governments or from government-funded entities. Deteriorating credit and economic conditions and other factors in these countries have resulted in, and may continue to result in an increase in the average length of time that it takes to collect these trade receivables and may require Novartis to re-evaluate the collectability of these trade receivables in future periods.

With regard to the GIPS countries, the countries with the largest outstanding trade receivables exposure are Italy and Spain. Substantially all of the outstanding trade receivables from these countries are due directly from local governments or from government-funded entities. A summary of the outstanding trade receivables from these countries and related provisions at December 31, 2013 and 2012 is as follows:

Italy

	2013	2012
	$ m	$ m
Gross trade receivables at December 31	636	712
Past due for more than one year at December 31	55	68
Provision at December 31	43	41

15. Trade Receivables (Continued)

Spain

	2013	2012
	$ m	$ m
Gross trade receivables at December 31	563	435
Past due for more than one year at December 31	111	6
Provision at December 31	22	5

The Government of Spain has established a plan, known as ICO 2, to help repay debts owed by local Spanish governmental authorities. A significant portion of the amounts due to Novartis from Spain that are past due for more than one year have been accepted into this plan. It is intended that payments will be made from this plan in 2014.

Novartis does not expect to write off trade receivable amounts that are not past due nor unprovided for.

Trade receivables include amounts denominated in the following major currencies:

Currency	2013	2012
	$ m	$ m
CHF	235	307
EUR	2,401	2,482
GBP	223	136
JPY	1,464	1,765
$	2,977	2,650
Other	2,756	2,711
Total trade receivables, net	**10,056**	**10,051**
Less assets of disposal group held for sale	(154)	
Total trade receivables excluding disposal group, net	**9,902**	**10,051**

16. Marketable Securities, Commodities, Time Deposits, Derivative Financial Instruments and Cash and Cash Equivalents

Marketable Securities, Commodities, Time Deposits and Derivative Financial Instruments	2013	2012
	$ m	$ m
Debt securities	323	1,084
Equity securities	47	68
Fund investments	11	23
Total available-for-sale marketable securities	**381**	**1,175**
Commodities	97	
Time deposits with original maturity more than 90 days	1,931	1,240
Derivative financial instruments	121	140
Accrued interest on debt securities and time deposits	5	12
Total marketable securities, commodities, time deposits and derivative financial instruments	**2,535**	**2,567**

At December 31, 2013 all debt securities are denominated in $ except for $1 million in CHF (2012: $645 million) and $26 million in EUR (2012: $26 million), respectively.

Cash and Cash Equivalents	2013	2012
	$ m	$ m
Current accounts	3,995	2,323
Time deposits and short-term investments[1] with original maturity less than 90 days	2,692	3,229
Total cash and cash equivalents	**6,687**	**5,552**

(1) 2012 contains $79 million which covers a guarantee and so it was restricted in use.

17. Other Current Assets

	2013	2012
	$ m	$ m
VAT receivable	1,223	1,250
Withholding tax recoverable	107	167
Income tax receivables	265	
Reimbursements from insurers	145	50
Prepaid expenses		
—Third parties	671	602
—Associated companies	3	6
Other receivables		
—Third parties	978	1,007
—Associated companies	5	8
Total other current assets	**3,397**	**3,090**
Less assets of disposal group held for sale	(5)	
Total other current assets excluding disposal group	**3,392**	**3,090**

18. Details of Shares and Share Capital Movements

	Number of shares[1]				
	Dec 31, 2011	Movement in year	Dec 31, 2012	Movement in year	Dec 31, 2013
Total Novartis shares	2,745,623,000	(39,430,000)	2,706,193,000		2,706,193,000
Total treasury shares	(338,929,143)	53,356,317	(285,572,826)	5,464,134	(280,108,692)
Total outstanding shares	**2,406,693,857**	**13,926,317**	**2,420,620,174**	**5,464,134**	**2,426,084,308**
	$ m	$ m	$ m	$ m	$ m
Share capital	1,016	(15)	1,001		1,001
Treasury shares	(121)	29	(92)	3	(89)
Outstanding share capital	**895**	**14**	**909**	**3**	**912**

(1) All shares are registered, authorized, issued and fully paid. All are voting shares and, except for 115 612 073 treasury shares at December 31, 2013 (2012: 99 859 750), are dividend bearing.

In 2013, outstanding shares have increased by 5.5 million shares (2012: 13.9 million shares).

The net increase consists of 11.5 million treasury shares, which were transferred to associates as part of equity based compensation (2012: 10.6 million shares) and the delivery of 34.3 million treasury shares, mainly due to options being exercised (2012: 12.0 million shares).

Furthermore, on November 22, 2013, Novartis announced a share buy-back on the second trading line up to an amount of $5.0 billion spread over two years. The share buy-back is based on the decision made at the 2008 Annual General Meeting for a share buy-back program of up to CHF 10.0 billion, of

18. Details of Shares and Share Capital Movements (Continued)

which CHF 7.5 billion is still available. As of December 31, 2013, 2.2 million shares have been purchased under this buy-back (2012: nil). Additionally, 33.3 million shares were purchased on the first trading line (2012: 4.6 million shares) and 4.8 million shares were acquired from associates (2012: 4.0 million shares).

In 2012, the 39.4 million shares from the last buy-back were cancelled. Shares acquired under the new share buy-back are also subject to cancellation.

There are outstanding written call options on Novartis shares of 38 million originally issued as part of the share-based compensation of associates. The market maker has acquired these options but they have not yet been exercised. The weighted average exercise price of these options is $54.78 and they have contractual lives of up to 10 years.

19. Non-Current Financial Debts

	2013	2012
	$ m	$ m
Straight bonds	12,909	14,783
Liabilities to banks and other financial institutions[1]	919	1,004
Finance lease obligations	4	3
Total (including current portion of non-current financial debt)	**13,832**	**15,790**
Less current portion of non-current financial debt	(2,590)	(2,009)
Total non-current financial debts	**11,242**	**13,781**
Straight bonds		
3.625% CHF 800 million bond 2008/2015 of Novartis AG, Basel, Switzerland, issued at 100.35%	896	869
5.125% $3,000 million bond 2009/2019 of Novartis Securities Investment Ltd., Hamilton, Bermuda, issued at 99.822%	2,989	2,988
4.125% $2,000 million bond 2009/2014 of Novartis Capital Corporation, New York, United States, issued at 99.897%	2,000	1,998
4.25% EUR 1,500 million bond 2009/2016 of Novartis Finance S.A., Luxembourg, Luxembourg, issued at 99.757%	2,064	1,974
1.9% $2,000 million bond 2010/2013 of Novartis Capital Corporation, New York, United States, issued at 99.867%		1,999
2.9% $2,000 million bond 2010/2015 of Novartis Capital Corporation, New York, United States, issued at 99.522%	1,996	1,993
4.4% $1,000 million bond 2010/2020 of Novartis Capital Corporation, New York, United States, issued at 99.237%	992	991
2.4% $1,500 million bond 2012/2022 of Novartis Capital Corporation, New York, United States, issued at 99.225%	1,484	1,483
3.7% $500 million bond 2012/2042 of Novartis Capital Corporation, New York, United States, issued at 98.325%	488	488
Total straight bonds	**12,909**	**14,783**

[1] Average interest rate 0.8% (2012: 0.8%)

19. Non-Current Financial Debts (Continued)

	2013	2012
	$ m	$ m
Breakdown by maturity		
2013		2,009
2014	2,590	2,713
2015	3,098	3,110
2016	2,085	1,987
2017	9	19
2018	9	1
After 2018	6,041	5,951
Total	**13,832**	**15,790**

	2013	2012
	$ m	$ m
Breakdown by currency		
$	9,953	11,943
EUR	2,141	2,043
JPY	762	929
CHF	896	869
Others	80	6
Total	**13,832**	**15,790**

Fair value comparison	2013 Balance sheet	2013 Fair values	2012 Balance sheet	2012 Fair values
	$ m	$ m	$ m	$ m
Straight bonds	12,909	13,547	14,783	16,130
Others	923	923	1,007	1,007
Total	**13,832**	**14,470**	**15,790**	**17,137**

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	2013	2012
	$ m	$ m
Total amount of collateralized non-current financial debts	7	12
Total net book value of property, plant & equipment pledged as collateral for non-current financial debts	139	136

The Group's collateralized non-current financial debt consists of loan facilities at usual market conditions.

19. Non-Current Financial Debts (Continued)

The percentage of fixed rate financial debt to total financial debt was 77% at December 31, 2013, and 80% at the end of 2012.

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 2013 was 3.3% (2012: 2.9%, 2011: 2.7%).

20. Provisions and Other Non-Current Liabilities

	2013	Restated 2012[1]
	$ m	$ m
Accrued liability for employee benefits:		
—Defined benefit pension plans	3,407	5,297
—Other long-term employee benefits and deferred compensation	557	631
—Other post-employment benefits	860	1,034
Environmental remediation provisions	961	1,001
Provisions for product liabilities, governmental investigations and other legal matters	463	630
Contingent consideration	460	573
Other non-current liabilities	560	644
Total	**7,268**	**9,810**

(1) Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30).

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, 2013 totals $1.1 billion (2012: $1.1 billion) of which $100 million (2012: $119 million) is current.

A substantial portion of the environmental remediation provision relates to the remediation of Basel regional landfills in the adjacent border areas in Switzerland, Germany and France following internal and external investigations completed during 2007 and the subsequent creation of an environmental remediation provision. The provisions are re-assessed on a yearly basis and have been adjusted as necessary.

In the United States, Novartis has been named under federal legislation (the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended) as a potentially responsible party (PRP) in respect of certain sites. Novartis actively participates in, or monitors, the clean-up activities at the sites in which it is a PRP. The provision takes into consideration the number of other PRPs at each site and the identity and financial position of such parties in light of the joint and several nature of the liability.

20. Provisions and Other Non-Current Liabilities (Continued)

The following table shows the movements in the environmental liability provisions during 2013, 2012 and 2011:

	2013	2012	2011
	$ m	$ m	$ m
January 1	**1,120**	**1,118**	**1,126**
Cash payments	(68)	(30)	(29)
Releases	(19)	(39)	(8)
Interest expense arising from discounting provisions		33	29
Additions	2	10	
Currency translation effects	26	28	
December 31	**1,061**	**1,120**	**1,118**
Less current liability	(100)	(119)	(59)
Non-current environmental remediation provisions at December 31	**961**	**1,001**	**1,059**

The expected timing of the related cash outflows as of December 31, 2013 is currently projected as follows:

	Expected cash outflows
	$ m
Due within two years	188
Due later than two years, but less than five years	219
Due later than five years but less than ten years	505
Due after ten years	149
Total environmental remediation liability provisions	**1,061**

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. 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 where there is a probable potential cash outflow. Such potential cash outflows might be fully or partially off-set by insurance in certain circumstances. Novartis has not established provisions for potential damage awards for certain additional legal claims against our subsidiaries if Novartis currently believes it is likely that it ultimately will prevail in them. In addition, with respect to the matters listed below in which the Group has an adverse damage award, no provision has been made for certain of them, because it is the Group's current best estimate based on its views as to the merits of the cases and its experience in such matters, that it ultimately will prevail in these cases on appeal. Such cases include a $30 million Mississippi Chancery Court Average Wholesale Price verdict against Sandoz that is currently on appeal. In total, these not-provisioned-for matters include more than 1,000 individual product liability cases and certain other legal matters. Plaintiffs' alleged claims in these matters, which Novartis does not believe to be

20. Provisions and Other Non-Current Liabilities (Continued)

entirely remote but which do not fulfill the conditions for the establishment of provisions, currently aggregate to, according to Novartis' current best belief, approximately $1.3 billion. In addition, in some of these matters there are claims for punitive or multiple (treble) damages, civil penalties and disgorgement of profits that, in Novartis' view, are either wholly or partially unspecified or wholly or partially unquantifiable at present. 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.

Legal Matters

A number of Novartis companies are, and will likely continue to be, subject to various legal proceedings and investigations that arise from time to time, including proceedings regarding product liability, sales and marketing practices, commercial disputes, employment, and wrongful discharge, antitrust, securities, health and safety, environmental, tax, international trade, privacy, and intellectual property matters. As a result, the Group may become subject to substantial liabilities that may not be covered by insurance and could affect our business and reputation. While Novartis does not believe that any of these legal proceedings will have a material adverse effect on its financial position, litigation is inherently unpredictable and large judgments sometimes occur. As a consequence, Novartis may in the future incur judgments or enter into settlements of claims that could have a material adverse effect on its results of operations or cash flow.

Governments and regulatory authorities around the world have been stepping up their compliance and law enforcement activities in recent years in key areas, including marketing practices, pricing, corruption, trade restrictions, embargo legislation, insider trading, antitrust, and data privacy. Responding to such investigations is costly and requires an increasing amount of management's time and attention. In addition, such investigations may affect our reputation, create a risk of potential exclusion from government reimbursement programs in the US and other countries, and may lead to litigation. 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 2015. Also, matters underlying governmental investigations and settlements may be the subject of separate private litigation.

The following is a summary of significant legal proceedings to which Novartis or its subsidiaries are a party or were a party and that were concluded in 2013.

Investigations and related litigations

Southern District of New York (SDNY) marketing practices investigation and litigation

In 2011, Novartis Pharmaceuticals Corporation (NPC) received a subpoena from the United States Attorney's Office (USAO) for the SDNY requesting the production of documents relating to marketing

20. Provisions and Other Non-Current Liabilities (Continued)

practices, including the remuneration of healthcare providers, in connection with three NPC products (*Lotrel*, *Starlix* and *Valturna*). The investigation is civil and criminal in nature. On April 26, 2013, the US government brought a civil complaint in intervention to an individual *qui tam* action against NPC in the United States District Court (USDC) for the SDNY which is related to the above investigation, asserting claims under the federal False Claims Act and under common law, claiming violations of the federal anti-kickback statute with respect to speaker programs allegedly serving as mechanisms to provide kickbacks to healthcare professionals, seeking unspecified damages, which according to the complaint are "substantial", treble damages and civil penalties. On August 26, 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*. NPC vigorously contests the SDNY, New York State and individual claims, both as to alleged liability and amount of damages and penalties.

SDNY / Western District of New York (WDNY) healthcare fraud investigation

In 2011, Alcon Laboratories, Inc. (ALI) received a subpoena from the United States Department of Health & Human Services relating to an investigation into allegations of healthcare fraud. The subpoena requests the production of documents relating to marketing practices, including the remuneration of healthcare providers, in connection with certain ALI products (*Vigamox*, *Nevanac*, *Omnipred*, *Econopred*; surgical equipment). ALI is cooperating with the investigation, which is civil in nature.

Western District of Kentucky (WDKY) investigation

In 2012, NPC received a subpoena from the USAO for the WDKY requesting the production of documents relating to marketing practices, including alleged remuneration of healthcare providers and off-label promotion, in connection with certain NPC products (including *Tekturna*, *Valturna*, *Reclast*, *Exelon* Patch and other products). NPC is cooperating with the investigation, which is civil and criminal in nature.

SDNY specialty pharmacies investigation and litigation

In 2012, NPC received a civil investigative demand (CID) from the USAO for the SDNY requesting information regarding its interactions with certain specialty pharmacies concerning certain NPC products. The investigation is civil in nature. On April 23, 2013, the US government brought a civil complaint in intervention to a *qui tam* action against NPC in the USDC for the SDNY which is related to the above investigation, asserting claims under the federal False Claims Act and under common law claiming violations of the federal anti-kickback statute with respect to alleged contractual discounts and rebates with pharmacies for *Myfortic*, seeking unspecified damages, which according to the complaint are "substantial", treble damages and civil penalties of $11,000 per incident as well as disgorgement of Novartis profits from the alleged unlawful conduct. On January 8, 2014, the USAO for the SDNY filed an amended civil complaint in intervention asserting additional federal anti-kickback statute claims as to NPC's relationships with another specialty pharmacy, Bioscrip, Inc., involving *Exjade*. The amended complaint seeks unspecified "substantial" damages, treble damages and civil penalties of $11,000 per incident as well as disgorgement of Novartis profits from the alleged unlawful conduct. On that same day, the States of New York, Georgia, Illinois, Indiana, Michigan, Maryland, New Jersey, Oklahoma and Wisconsin filed a joint complaint in intervention asserting similar claims relating to *Exjade*. On the next day, the State of California filed its own complaint asserting similar claims relating to *Exjade*. NPC

20. Provisions and Other Non-Current Liabilities (Continued)

vigorously contests the government claims regarding *Myfortic* and *Exjade*, both as to alleged liability and amount of damages and penalties.

Northern District of Texas (NDTX) investigation

In 2012, Alcon was notified that the USAO for the NDTX is conducting an investigation relating to the export of Alcon products to various countries subject to United States trade sanctions, including Iran, allegedly in violation of applicable trade sanctions, and received a grand jury subpoena requesting the production of documents for a period beginning in 2005 relating to this investigation. Alcon is cooperating with the investigation.

SDNY *Gilenya* investigation

In July 2013, NPC received a CID from the USAO for the SDNY requesting the production of documents and information relating to marketing practices for *Gilenya*, including the remuneration of healthcare providers in connection therewith. NPC is cooperating with this civil investigation.

European Commission (EC) dawn raid at Sandoz S.A.S. (Sandoz France)

In 2009, the EC searched the offices of Sandoz France, alleging that Sandoz France entered into anti-competitive price coordination practices with other generic pharmaceutical companies and via the French trade association for generic pharmaceutical companies. Sandoz France is cooperating with the EC. No follow-up requests have been received from the EC so far.

Italy *Lucentis*/Avastin® investigation

In 2013, the Italian Competition Authority (ICA) opened an investigation to assess whether Novartis Farma S.p.A., Novartis AG, F. Hoffmann-La Roche AG, Genentech Inc. and Roche S.p.A. colluded to prevent the commercialization of Avastin® for ophthalmic use and preserve the market position of *Lucentis* in Italy. On October 25, 2013, the ICA issued its Statement of Objections containing the ICA's preliminary view that there was a concertation between Novartis and Roche (Genentech) aimed at maximizing *Lucentis* sales to the detriment of Avastin®. Novartis intends to vigorously defend the allegations.

Japan investigation

In April 2013, Novartis Pharma K.K. (NPKK) launched a comprehensive investigation with external specialists into allegations of an undisclosed conflict of interest related to Japanese post-registration researcher initiated valsartan trials. The investigation identified that two former employees of NPKK were not appropriately disclosed as NPKK employees in the trial publications for 5 studies. The Japanese Ministry of Health, Labor and Welfare (MHLW) subsequently established a Committee to investigate the facts surrounding this case, and in September 2013, the MHLW published a draft interim report in which it required further actions, including investigations by the government into allegations of exaggerated advertising. None of the trials/publications were used for registration purposes.

On January 9, 2014, the MHLW filed a criminal complaint which has the effect of transferring the investigation of the Japanese researcher initiated valsartan trials to the prosecutor's office for criminal investigation of NPKK. Novartis is cooperating fully with the authorities.

20. Provisions and Other Non-Current Liabilities (Continued)

On January 17, 2014, allegations of inappropriate involvement of NPKK representatives in a nilotinib researcher initiated study were raised in the media. Novartis is conducting a comprehensive investigation into such allegations.

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 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 its investigation.

Product liability matters

Zometa/*Aredia* product liability litigation

NPC is a defendant in approximately 592 cases brought in US courts, in which plaintiffs claim to have experienced osteonecrosis of the jaw after treatment with *Zometa* or *Aredia*, which are used to treat patients whose cancer has spread to the bones. The majority of US cases were initially centralized in two venues—a federal multidistrict proceeding for pre-trial proceedings and a separate state court proceeding in New Jersey for pre-trial proceedings and trial. Cases from the federal multidistrict proceeding are tried in the plaintiffs' home jurisdictions after completion of pre-trial proceedings. As of April 2011, new federal cases are no longer transferred to the multidistrict proceeding but proceed in the federal court in which they were filed. From the outset of the litigation, approximately 269 cases have been dismissed on pre-trial summary judgment or other dismissal motion, of which 15 remain on appeal.

Through the end of the fourth quarter of 2013, judgment has been entered in favor of NPC in seven jury trials, six of which are now final, and plaintiffs have obtained one verdict outside the centralized proceedings and six verdicts in the centralized litigation. In the centralized proceedings juries awarded compensatory damages (averaging approximately $0.8 million in each case), no punitive damages in four cases, and punitive damages (as capped by applicable state and federal laws) totaling approximately $1.8 million in the remaining two. Four of the verdicts in favor of plaintiffs in the centralized litigation are not final given remaining post-trial and appeal options in each. In the one plaintiff's verdict outside the centralized proceedings, the jury awarded $2.65 million in compensatory damages and no punitive damages.

Further trials are scheduled in 2014. Individual case results, which can depend on the particular facts of a given case, may not necessarily be predictive of results in other cases. The cases are being vigorously defended.

Aclasta/*Reclast* product liability litigation

NPC is a defendant in 21 US product liability actions involving *Aclasta* and *Reclast*, most of which are in New Jersey state or federal court coordinated with claims against other bisphosphonate manufacturers and claim atypical femur fracture injuries. One claimant alleges other bodily injuries. There are also three Canadian putative class actions brought against numerous bisphosphonate manufacturers including NPC, Novartis Pharmaceuticals Canada Inc. and Novartis International AG in Quebec, Alberta and Saskatchewan. All cases are being vigorously defended.

20. Provisions and Other Non-Current Liabilities (Continued)

Metoclopramide product liability litigation

Sandoz is a defendant, along with numerous manufacturers of brand pharmaceuticals, in 387 product liability actions in the state courts in Pennsylvania and California claiming that the use of Metoclopramide, the generic version of the brand name drug Reglan®, caused personal injuries including tardive dyskinesia. Sandoz denies the allegations and is vigorously defending the cases.

Tekturna/*Rasilez*/*Valturna* product liability litigation

NPC and certain other Novartis affiliates are defendants in ten 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 cases are being vigorously defended.

Arbitration

NPKK is a respondent and counter-claimant in an arbitration proceeding commenced by Sanofi K.K. (Sanofi) relating to the termination of a co-promotion agreement in Japan of *Equa* (*Galvus*), which is used to treat type 2 diabetes. In November 2013, Sanofi filed a request for an award of approximately $416 million, together with a request for payment of related legal costs and interest. 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, NPC and ALI, alleging that they fraudulently overstated the AWP that is or has been used by payors, including state Medicaid agencies, to calculate reimbursements to healthcare providers. In 2013, following appellate review, judgment was entered in favor of Sandoz on the claims against it in Kentucky. Also in 2013, settlements have been obtained in the cases brought by the states of Idaho (NPC), Mississippi (NPC), Alaska (NPC), Louisiana (Sandoz, NPC and ALI), Alabama (ALI), and Kansas (Sandoz), each for amounts that are not material to Novartis. Actions brought by the states of Illinois, Kansas, Mississippi, Utah and Wisconsin remain pending against one or more Novartis companies. At least one trial is scheduled for 2014. NPC is also a defendant in a putative class action brought by private payors in New Jersey. The cases are being vigorously defended.

Qui tam actions

NPC is a defendant in a relator's *qui tam* action in the USDC for the Eastern District of Pennsylvania (EDPA) asserting federal and state False Claims Act claims relating to certain alleged marketing practices involving Elidel®. The same relator filed a similar suit in Texas state court that was voluntarily dismissed as part of a settlement in 2012. The federal government and several states declined to intervene in the EDPA action. In the second quarter of 2013, the court granted in part and denied in part NPC's motion to dismiss the relator's amended complaint, allowing the relator to file a more limited second amended complaint asserting claims under the federal False Claims Act solely as to certain allegations of off-label marketing, as well as kickback and off-label claims under the laws of six states with certain time limitations. The court subsequently ruled that the relator could reinstate claims under the laws of two additional states. The relator's complaint does not specify an amount of monetary damages sought but

20. Provisions and Other Non-Current Liabilities (Continued)

alleges that NPC's alleged misconduct has caused the submission of millions of false claims in violation of state and federal laws. NPC is vigorously contesting the action.

In 2006, NPC received a subpoena seeking certain information regarding the marketing and promotion of *Xolair*. The investigation was prompted by a relator's *qui tam* action. The investigation was closed in 2011, and the federal and various state governments declined to intervene and join in that action, which the relator then dismissed without prejudice. In 2012, approximately six years after her filing of the original *qui tam* action, the relator re-filed her complaint in the USDC for the District of Massachusetts (DMA). In 2014, NPC and Novartis Corporation were served with that complaint, which names NPC, Novartis Corporation and Novartis AG as well as various Roche and Genentech entities as defendants. The action asserts various federal False Claims Act claims, as well as similar claims under the laws of 27 states and the District of Columbia, relating to certain alleged improper marketing practices involving *Xolair*. No government entity has intervened in the current action. Novartis denies the allegations and intends to vigorously contest the action, which is at the earliest stage.

Solodyn® antitrust class actions and FTC investigation

Since July 22, 2013, thirteen class action complaints have been filed against manufacturers of the brand drug Solodyn® and its generic equivalents, including Sandoz Inc. The cases are currently pending in the USDC for the EDPA, the DMA and the District of Arizona. The plaintiffs purport to represent direct and indirect purchasers of Solodyn® branded products and assert violations of federal and state antitrust laws, including allegations in connection with separate settlements by Medicis with each of the other defendants, including Sandoz Inc., of patent litigation relating to generic Solodyn®. Plaintiffs seek, among other things, unspecified monetary damages and equitable relief. The conduct challenged in these cases is also the subject of a pending investigation by the Federal Trade Commission (FTC) in which Sandoz Inc. has cooperated in providing documents and other information in response to a CID. Sandoz intends to vigorously defend this litigation.

Oriel litigation

A complaint was filed in October 2013 in the Supreme Court-New York County by Shareholder Representative Services LLC, purportedly on its own behalf and in its capacity as representative of former shareholders of Oriel Therapeutics, Inc. (Oriel) against Sandoz Inc. and two affiliates and one current and one former officer of Sandoz AG. Plaintiffs assert various common law and statutory contract, fraud and negligent misrepresentation claims arising out of the Sandoz Inc. purchase of Oriel and seek $335 million in compensatory damages as well as certain recissionary relief and punitive damages. Sandoz denies the allegations and intends to vigorously defend the case.

Consumer class actions

Novartis companies have been the subject of various consumer lawsuits that are brought as proposed class actions but in which class certification has not been decided. For example, four putative class actions were brought in December 2013 and January 2014 against Novartis and its consumer health unit, in California Superior Court, in the USDC for the DNJ, in the USDC for the Eastern District of New York and in the USDC for the Northern District of California, generally claiming 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. Between November 2012 and December 2013, four putative consumer fraud class action

20. Provisions and Other Non-Current Liabilities (Continued)

litigations were commenced in the Southern District of Illinois, the Eastern District of Missouri and the Southern District of Florida claiming that Alcon (and in two cases Sandoz) 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. These cases are being vigorously defended, both on the merits and with respect to class certification.

Intellectual Property Litigation

Novartis companies are involved in legal proceedings challenging the scope and/or validity of the patents on their products. In addition, Novartis companies are also involved in legal proceedings challenging third party patents and/or defending infringement proceedings relating to third party intellectual property rights. The inherent unpredictability of patent litigation means that there can be no assurances as to the ultimate outcome of these proceedings. A negative result in any such proceeding could potentially adversely affect the ability of the Novartis company concerned to sell its products or require the payment of substantial damages or royalties.

Concluded legal matters

Elidel® product liability litigation

NPC and other Novartis subsidiaries were defendants in more than 20 cases brought in US courts in which plaintiffs claimed to have experienced injuries, mainly various types of cancer, after having been treated with Elidel®, a medicine for atopic dermatitis. These cases were resolved in the second quarter of 2013 for an amount that is not material to Novartis.

WDNY investigation

In 2010, NPC became aware of an investigation by the USAO for the WDNY into informed consent issues relating to clinical trials in China and into marketing practices, including the remuneration of healthcare providers, in connection with a number of Novartis products. NPC cooperated with the investigation which was civil in nature. In the fourth quarter of 2012, Novartis learned that the government was not pursuing further informed consent issues relating to clinical trials in China. The government continued to investigate marketing practices, including marketing practices concerning *Zometa*. In October 2013, the government informed NPC that it no longer was going to pursue this investigation and that the underlying *qui tam* actions were dismissed.

Hormone Replacement Therapy product liability litigation

As of 2013, NPC and other Novartis subsidiaries were defendants, along with various other pharmaceutical companies in the US, in numerous cases brought in the US courts in which plaintiffs claimed to have been injured by hormone replacement therapy products. In October 2013, all cases were resolved on behalf of the Novartis companies for an amount that is not material to Novartis.

EC fentanyl investigation

In 2010, the EC conducted dawn raids at the Dutch and German offices of Sandoz. On October 18, 2011, the EC initiated proceedings against Sandoz BV, Novartis AG, Janssen-Cilag BV and Johnson & Johnson to assess whether contractual arrangements among Janssen-Cilag BV and Sandoz subsidiaries in

20. Provisions and Other Non-Current Liabilities (Continued)

the Netherlands may have had the object or effect of hindering the entry of generic fentanyl patches in the Netherlands. On December 10, 2013, the EC issued a decision finding that a 2005 agreement between Janssen-Cilag BV and Sandoz subsidiaries in the Netherlands related to the co-promotion of fentanyl in the Netherlands violated EU competition law and imposed a fine equivalent to $7.4 million on Sandoz BV and Novartis AG.

DMA investigation

In the first quarter of 2013, Novartis Vaccines and Diagnostics, Inc. (NVD) received a subpoena from the USAO for the DMA requesting the production of documents relating to alleged quality issues at NVD's Emeryville and NPC's Vacaville facilities in California in relation to antigens. NVD cooperated with the investigation which was civil and criminal in nature. In January 2014, the USAO decided to close its investigation without criminal charges or civil sanctions.

Summary of Product Liability, Governmental Investigations and Other Legal Matters Provision Movements:

	2013	2012	2011
	$ m	$ m	$ m
January 1	**998**	**1,182**	**1,384**
Impact of business combinations		60	
Cash payments	(373)	(362)	(772)
Releases of provisions	(184)	(262)	(16)
Additions to provisions	499	389	584
Currency translation effects	(16)	(9)	2
December 31	**924**	**998**	**1,182**
Less current portion	(461)	(368)	(405)
Non-current product liabilities, governmental investigations and other legal matters provisions at December 31	**463**	**630**	**777**

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

	2013	2012
	$ m	$ m
Interest-bearing accounts of associates	1,718	1,541
Bank and other financial debt	1,323	1,270
Commercial paper	1,042	963
Current portion of non-current financial debt	2,590	2,009
Fair value of derivative financial instruments	103	162
Total current financial debt	**6,776**	**5,945**

21. Current Financial Debt (Continued)

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 2.3% in 2013 and 2.1% in 2012.

22. Provisions and Other Current Liabilities

	2013	2012
	$ m	$ m
Taxes other than income taxes	624	561
Restructuring provisions	174	221
Accrued expenses for goods and services received but not invoiced	553	576
Accruals for royalties	468	452
Provisions for revenue deductions	4,182	4,072
Accruals for compensation and benefits including social security	2,386	2,222
Environmental remediation liabilities	100	119
Deferred income	70	71
Provision for product liabilities, governmental investigations and other legal matters	461	368
Accrued share-based payments	255	262
Contingent considerations	112	
Other payables	1,562	1,519
Total provisions and other current liabilities	**10,947**	**10,443**
Less provisions and other current liabilities of disposal group held for sale	(12)	
Total provisions and other current liabilities, excluding disposal group	**10,935**	**10,443**

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:

	2013	2012	2011
	$ m	$ m	$ m
January 1	**4,072**	**3,742**	**3,097**
Impact of business combinations		174	
Additions	13,095	12,150	11,713
Payments/utilizations	(12,762)	(11,938)	(10,749)
Changes in offset against gross trade receivables	(224)	(90)	(227)
Currency translation effects	1	34	(92)
December 31	**4,182**	**4,072**	**3,742**

22. Provisions and Other Current Liabilities (Continued)

Restructuring Provision Movements

	$ m
January 1, 2011	**241**
Additions	346
Cash payments	(203)
Releases	(37)
Currency translation effects	2
December 31, 2011	**349**
Additions	281
Cash payments	(299)
Releases	(115)
Currency translation effects	5
December 31, 2012	**221**
Additions	175
Cash payments	(134)
Releases	(47)
Transfer	(42)
Currency translation effects	1
December 31, 2013	**174**

In 2013, additions to provisions of $175 million were mainly related to reorganizations of the Pharmaceuticals research and development activities and the integration of Alcon.

In 2012, additions to provisions of $281 million were incurred in the Pharmaceuticals Division Marketing & Sales organization in conjunction with the anticipation of patent expirations; in Alcon as a result of continuous integration and in Sandoz due to the integration of the acquired company Fougera. Other Group initiatives to further simplify the organization were mainly related to Consumer Health and Sandoz.

In 2011, additions to provisions of $346 million were incurred in the Pharmaceuticals Division in conjunction with the transfer, outsourcing, closure of selected research operations, as well as simplifying and streamlining of certain development and support functions and in Alcon in conjunction with its integration. Other initiatives mainly includes costs incurred in conjunction with the Group-wide review of its manufacturing sites, mainly in Switzerland, United Kingdom, United States, Italy and Puerto Rico.

22. Provisions and Other Current Liabilities (Continued)

The releases to income in 2013 and 2012 of $47 million and $115 million, respectively, were mainly due to settlement of liabilities at lower amounts than originally anticipated.

	Third party costs[1]		Termination costs		Additions to provision		Number of employees affected	
Restructuring initiatives	**2013**	**2012**	**2013**	**2012**	**2013**	**2012**	**2013**	**2012**
	$ m	**$ m**	**$ m**	**$ m**	**$ m**	**$ m**		
Pharmaceuticals Research & Development	35		25		60		710	
Pharmaceuticals Marketing & Sales organization	2	9	20	181	22	190	380	1,850
Alcon integration	1	1	53	31	54	32	275	320
Fougera integration		3	1	15	1	18	100	140
Various Group initiatives to simplify organizational structure—including manufacturing sites	8	13	30	28	38	41	830	150
Total	**46**	**26**	**129**	**255**	**175**	**281**	**2,295**	**2,460**

[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

	2013	Restated 2012[1]	Restated 2011[1]
	$ m	**$ m**	**$ m**
Taxes	1,443	1,542	1,483
Depreciation, amortization and impairments on			
Property, plant & equipment	1,835	1,743	2,141
Intangible assets	3,090	3,177	3,647
Financial assets	65	34	192
Income from associated companies	(600)	(552)	(528)
Gains on disposal of property, plant & equipment, intangible, financial and other non-current assets, net	(395)	(294)	(518)
Equity-settled compensation expense	730	746	790
Change in provisions and other non-current liabilities	807	857	1,513
Net financial income	775	820	753
Total	**7,750**	**8,073**	**9,473**

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30).

23. Details to the Consolidated Cash Flow Statements (Continued)

23.2) Cash flows from Changes in Working Capital and Other Operating Items included in Operating Cash Flow

	2013	2012	2011
	$ m	$ m	$ m
(Increase)/decrease in inventories	(653)	(701)	45
(Increase)/decrease in trade receivables	(411)	369	(732)
Increase in trade payables	502	515	195
Change in other net current assets and other operating cash flow items	(177)	(323)	379
Total	**(739)**	**(140)**	**(113)**

23.3) Cash Flow arising from Acquisitions and Divestments of Businesses

The following is a summary of the cash flow impact of those significant transactions described in Note 2 and other smaller transactions:

	2012 Acquisitions	2011 Acquisitions	2011 Divestments
	$ m	$ m	$ m
Property, plant & equipment	(126)	(66)	16
Currently marketed products	(521)	(101)	
Acquired research & development	(173)	(7)	
Technologies	(371)	(3)	
Software and other intangible assets		(1)	
Financial and other assets including deferred tax assets	(165)	(7)	
Inventories	(88)	(15)	8
Trade receivables and other current assets	(90)	(52)	5
Marketable securities and cash	(167)	(186)	1
Current and non-current financial debts	4		
Trade payables and other liabilities including deferred tax liabilities	747	66	(7)
Net identifiable assets acquired or divested	**(950)**	**(372)**	**23**
Acquired / divested liquidity	167	63	(1)
Non-controlling interest	29	19	
Fair value of previously held equity interests	22		
Sub-total	**(732)**	**(290)**	**22**
Goodwill	(1,026)	(303)	
Deferred consideration (including payment of contingent considerations)	17	2	
Net cash flow	**(1,741)**	**(591)**	**22**

There were no significant acquisitions or divestments which had an impact on the cash flow statement in 2013, however $42 million were paid for contingent considerations regarding acquisitions from previous years.

23. Details to the Consolidated Cash Flow Statements (Continued)

Notes 2 and 24 provide further information regarding acquisitions and divestments of businesses. All acquisitions were for cash.

24. Acquisitions of Businesses

Assets and Liabilities Arising from Acquisitions

Fair value	2012
	$ m
Property, plant & equipment	126
Currently marketed products	521
Acquired research & development	173
Technologies	371
Financial and other assets including deferred tax assets	165
Inventories	88
Trade receivables and other current assets	90
Marketable securities and cash	167
Current and non-current financial debts	(4)
Trade payables and other liabilities including deferred tax liabilities	(747)
Net identifiable assets acquired	**950**
Acquired liquidity	(167)
Non-controlling interest	(29)
Goodwill	1,026
Net assets recognized as a result of business combinations	**1,780**

Note 2 details significant acquisition of businesses. There were no significant acquisitions in 2013. In 2012, goodwill arising out of the acquisitions reflects mainly the value of future products and the acquired assembled workforce.

25. Post-Employment Benefits of 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.

25. Post-Employment Benefits of Associates (Continued)

Swiss-based pension plans represent the most significant portion of the Group's total DBO and plan assets. For the active insured members born on or after January 1, 1956, or having joined the plans after December 31, 2010 the benefits are partially linked to the contributions paid into the plan. Certain features of Swiss pension plans required by law preclude the plans being categorized as defined contribution plans. These factors include a minimum interest guarantee on retirement savings accounts, a pre-determined factor for converting the accumulated savings account balance into a pension and embedded death and disability benefits.

All benefits granted under Swiss pension plans are vested and Swiss legislation prescribes that the employer has to contribute a fixed percentage of an associate's pay to an external pension fund. Additional employer's contributions may be required whenever the plan's statutory funding ratio falls below a certain level. The associate also contributes to the plan. The pension plans are run by separate legal entities, each governed by a Board of Trustees which for the principal plans consists of representatives nominated by Novartis and by the active insured associates. The Boards of Trustees are responsible for the plan design and the asset investment strategy.

The US pension plans represent the second largest component of the Group's total DBO and plan assets. The principal plans (Qualified Plans) are funded whereas plans providing additional benefits for executives (Restoration Plans) are unfunded. Employer contributions are required for Qualified Plans whenever the statutory funding ratio falls below a certain level. Furthermore, associates in the US are covered under other post-employment benefit plans and post-retirement medical plans.

25. Post-Employment Benefits of Associates (Continued)

The following tables are a summary of the funded and unfunded defined benefit obligation for pension and other post-employment benefit plans of associates at December 31, 2013 and 2012:

	Pension plans		Other post-employment benefit plans	
	2013	Restated 2012[1]	2013	Restated 2012[1]
	$ m	$ m	$ m	$ m
Benefit obligation at January 1	**25,503**	**21,730**	**1,271**	**1,241**
Current service cost	478	395	48	44
Interest cost	580	665	46	48
Past service costs and settlements	(66)	(6)	(73)	(3)
Administrative expenses	18	15		
Remeasurement (gains)/losses arising from changes in financial assumptions	(1,248)	2,175	(131)	(52)
Remeasurement (gains)/losses arising from changes in demographic assumptions	(60)	889	(7)	3
Experience related remeasurement losses/(gains)	160	16	(19)	35
Currency translation effects	442	488	(6)	2
Benefit payments	(1,240)	(1,238)	(60)	(50)
Contributions of associates	221	189		3
Effect of acquisitions, divestments or transfers	13	185		
Benefit obligation at December 31	**24,801**	**25,503**	**1,069**	**1,271**
Fair value of plan assets at January 1	**20,282**	**18,826**	**237**	**222**
Interest income	438	539	8	9
Return on plan assets excluding interest income	850	984	6	18
Currency translation effects	383	408		
Novartis Group contributions	560	497	18	35
Contributions of associates	221	189		3
Settlements	(14)	(2)		
Benefit payments	(1,240)	(1,238)	(60)	(50)
Effect of acquisitions, divestments or transfers	1	79		
Fair value of plan assets at December 31	**21,481**	**20,282**	**209**	**237**
Funded status	**(3,320)**	**(5,221)**	**(860)**	**(1,034)**
Limitation on recognition of fund surplus at January 1	**(21)**	**(51)**		
Change in limitation on recognition of fund surplus	(21)	30		
Interest income on limitation of fund surplus	(3)			
Limitation on recognition of fund surplus at December 31	**(45)**	**(21)**		
Net liability in the balance sheet at December 31	**(3,365)**	**(5,242)**	**(860)**	**(1,034)**

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30)

25. Post-Employment Benefits of Associates (Continued)

The reconciliation of the net liability from January 1 to December 31 is as follows:

	Pension plans		Other post-employment benefit plans	
	2013	**Restated 2012[1]**	**2013**	**Restated 2012[1]**
	$ m	**$ m**	**$ m**	**$ m**
Net liability at January 1	**(5,242)**	**(2,955)**	**(1,034)**	**(1,019)**
Current service cost	(478)	(395)	(48)	(44)
Net interest expense	(145)	(126)	(38)	(39)
Administrative expenses	(18)	(15)		
Past service costs and settlements	52	4	73	3
Remeasurements	1,998	(2,096)	163	32
Currency translation effects	(59)	(80)	6	(2)
Novartis Group contributions	560	497	18	35
Effect of acquisitions, divestments or transfers	(12)	(106)		
Change in limitation on recognition of fund surplus	(21)	30		
Net liability at December 31	**(3,365)**	**(5,242)**	**(860)**	**(1,034)**
Amounts recognized in the consolidated balance sheet				
Prepaid benefit cost	42	55		
Accrued benefit liability	(3,407)	(5,297)	(860)	(1,034)

[1] Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see Note 30)

25. Post-Employment Benefits of Associates (Continued)

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.

	2013 $ m				2012 $ m			
	Switzerland	US	Rest of the World	Total	Switzerland	US	Rest of the World	Total
Benefit obligation at December 31	**16,683**	**3,430**	**4,688**	**24,801**	**17,103**	**3,822**	**4,578**	**25,503**
Thereof unfunded		*685*	*522*	*1,207*		*735*	*547*	*1,282*
Analysed by type of member								
Active	6,617	1,087	1,634	9,338	6,682	1,382	1,641	9,705
Deferred pensioners		757	1,427	2,184		792	1,652	2,444
Pensioners	10,066	1,586	1,627	13,279	10,421	1,648	1,285	13,354
Fair value of plan assets at December 31	**15,873**	**2,460**	**3,148**	**21,481**	**15,042**	**2,203**	**3,037**	**20,282**
Funded Status	**(810)**	**(970)**	**(1,540)**	**(3,320)**	**(2,061)**	**(1,619)**	**(1,541)**	**(5,221)**

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		
	2013	2012	2011	2013	2012	2011
	%	%	%	%	%	%
Weighted average assumptions used to determine benefit obligations at December 31						
Discount rate	2.9%	2.4%	3.2%	4.7%	3.6%	4.3%
Expected rate of pension increase	1.1%	0.9%	0.9%			
Expected rate of salary increase	3.5%	3.3%	3.3%			
Interest on savings account	2.1%	1.6%	2.5%			
Current average life expectancy for a 65-year-old male/female	21/23 years	21/23 years	20/22 years	19/21 years	19/21 years	20/22 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

25. Post-Employment Benefits of Associates (Continued)

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 2013 year end defined benefit pension obligation
	$ m
25 basis point increase in discount rate	(755)
25 basis point decrease in discount rate	799
1 year increase in life expectancy	810
25 basis point increase in rate of pension increase	509
25 basis point decrease in rate of pension increase	(484)
25 basis point increase of interest on savings account	66
25 basis point decrease of interest on savings account	(64)
25 basis point increase in rate of salary increase	61
25 basis point decrease in rate of salary increase	(64)

25. Post-Employment Benefits of Associates (Continued)

The healthcare cost trend rate assumptions for other post-employment benefits are as follows:

Healthcare cost trend rate assumptions used	2013	2012	2011
Healthcare cost trend rate assumed for next year	7.0%	7.1%	7.7%
Rate to which the cost trend rate is assumed to decline	5.0%	5.0%	5.0%
Year that the rate reaches the ultimate trend rate	2021	2020	2020

The following table shows the weighted average plan asset allocation of funded defined benefit pension plans at December 31, 2013 and 2012:

	Pension plans		
	Long-term target	2013	2012
	%	%	%
Equity securities	15–40	39	29
Debt securities	20–60	32	43
Real estate	5–20	13	13
Alternative investments	0–20	10	9
Cash and other investments	0–15	6	6
Total		**100**	**100**

Cash, as well as most of the equity and debt securities have a quoted market price in an active market. Real estate and alternative investments, which include hedge fund and private equity investments usually do not have a quoted market price.

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, 2013 19.8 million shares with a market value of $1.6 billion (2012: 19.8 million shares with a market value of $1.2 billion).

The weighted average duration of the defined benefit obligation is 13.8 years (2012: 14.1 years).

The Group's ordinary contribution to the various pension plans are based on the rules of each plan. Additional contributions are made whenever this is required by statute or law; i.e. usually when statutory funding levels fall below pre-determined thresholds. The only significant plans that are foreseen to require additional funding are those in the US and UK.

25. Post-Employment Benefits of Associates (Continued)

The expected future cash flows in respect of pension and other post-employment benefit plans at December 31, 2013 were as follows:

	Pension plans	Other post-employment benefit plans
	$ m	$ m
Novartis Group contributions		
2014 (estimated)	471	55
Expected future benefit payments		
2014	1,351	55
2015	1,355	58
2016	1,377	61
2017	1,389	64
2018	1,402	67
2019–2023	7,073	369

Defined Contribution Plans

In many subsidiaries, associates are covered by defined contribution plans. Contributions charged to the 2013 consolidated income statement for the defined contribution plans were $351 million (2012: $345 million, 2011: $337 million).

26. Equity-Based Participation Plans of Associates

The expense related to all equity-based participation plans in the 2013 consolidated income statement was $987 million (2012: $1.0 billion, 2011: $1.0 billion) resulting in a total carrying amount for liabilities arising from share-based payment transactions of $255 million (2012: $262 million, 2011: $217 million).

Equity-based participation plans can be separated into the following plans.

Novartis Equity Plan "Select"

The Equity Plan "Select" is a global equity incentive plan under which eligible associates, including Executive Committee members up to 2013, may annually be awarded a grant capped at 200% of target. The equity-based long-term incentive is subject to the achievement of predetermined business and individual performance objectives at grant. No awards are granted for performance ratings below a certain threshold.

The Equity Plan "Select" allows its participants to choose the form of their equity compensation in restricted shares (or, in some jurisdictions, restricted share units (RSUs)), and until 2013, tradable share options, or a combination of both. The vesting period for the plan is three years except for grants prior to 2012 in Switzerland which had a two years vesting period.

In some jurisdictions, RSUs are granted rather than shares. Each RSU is equivalent in value to one Novartis share and is converted into one share at the vesting date. RSUs do not carry any voting or dividend rights, except for the United States where employees receive a dividend equivalent during the

26. Equity-Based Participation Plans of Associates (Continued)

vesting period for the 2010 and 2011 grants. Each restricted share is entitled to voting rights and payment of dividends during the vesting period.

Tradable share options expire on their 10th anniversary from grant date. Each tradable share option granted to associates entitles the holder to purchase after vesting (and before the 10th anniversary from grant date) one Novartis share at a stated exercise price that equals the closing market price of the underlying share at the grant date.

The terms and conditions of the Novartis Equity Plan "Select" outside North America are substantially equivalent to the Novartis Equity Plan "Select" for North America. Share options of the Novartis Equity Plan "Select" for North America have only been tradable since 2004.

Novartis Equity Plan "Select" outside North America

The expense recorded in the 2013 consolidated income statement relating to both shares and share options under this plan amounted to $116 million (2012: $122 million, 2011: $158 million). Participants in this plan were granted in 2013 a total of 2.1 million restricted shares and RSUs at CHF 61.70 (2012: 2.4 million restricted shares and RSUs at CHF 54.20).

The following table shows the assumptions on which the valuation of share options granted during the period was based:

	Novartis Equity Plan "Select" outside North America	
	2013	**2012**
Valuation date	January 17, 2013	January 19, 2012
Expiration date	January 17, 2023	January 19, 2022
Closing share price on grant date	CHF 61.70	CHF 54.20
Exercise price	CHF 61.70	CHF 54.20
Implied bid volatility	13.40%	14.85%
Expected dividend yield	4.64%	4.82%
Interest rate	0.94%	0.94%
Market value of option at grant date	CHF 4.28	CHF 4.30

26. Equity-Based Participation Plans of Associates (Continued)

The following table shows the activity associated with the share options during the period. The weighted average prices in the table below are translated from Swiss Francs into $ at historical rates for the granted, sold, and forfeited or expired options. The year-end prices are translated using the corresponding year-end rates.

	2013		2012	
	Options	Weighted average exercise price	Options	Weighted average exercise price
	(millions)	($)	(millions)	($)
Options outstanding at January 1	**33.2**	**54.5**	**35.5**	**53.5**
Granted	5.6	66.0	5.4	57.6
Sold	(12.1)	53.6	(6.3)	50.8
Forfeited or expired	(0.3)	60.1	(1.4)	57.5
Outstanding at December 31	**26.4**	**57.3**	**33.2**	**54.5**
Exercisable at December 31	**16.8**	**54.4**	**24.4**	**53.5**

All share options were granted at an exercise price which was equal to the market price of the Group's shares at the grant date. The weighted average exercise price during the period the options were sold in 2013 was $53.57. The weighted average share price at the dates of sale was $74.04.

The following table summarizes information about share options outstanding at December 31, 2013:

	Options outstanding		
Range of exercice prices ($)	Number outstanding	Average remaining contractual life	Weighted average exercise price
	(millions)	(years)	($)
45–49	3.6	4.1	46.9
50–54	5.0	5.0	54.4
55–59	12.3	5.9	57.8
60–65	5.5	9.1	66.0
Total	**26.4**	**6.2**	**57.3**

Novartis Equity Plan "Select" for North America

The expense recorded in the 2013 consolidated income statement relating to both shares and share options under this plan amounted to $329 million (2012: $297 million, 2011: $263 million). Participants in this plan were granted a total of 4.7 million restricted shares and RSUs at $66.07 (2012: 5.1 million restricted shares and RSUs at $58.33).

26. Equity-Based Participation Plans of Associates (Continued)

The following table shows the assumptions on which the valuation of share options granted during the period was based:

	Novartis Equity Plan "Select" for North America	
	2013	**2012**
Valuation date	January 17, 2013	January 19, 2012
Expiration date	January 17, 2023	January 19, 2022
Closing ADR price on grant date	$66.07	$58.33
Exercise price	$66.07	$58.33
Implied bid volatility	11.60%	12.20%
Expected dividend yield	4.65%	4.82%
Interest rate	1.96%	2.09%
Market value of option at grant date	$4.37	$4.14

The following table shows the activity associated with the share options during the period:

	2013		2012	
	ADR options	**Weighted average exercise price**	**ADR options**	**Weighted average exercise price**
	(millions)	**($)**	**(millions)**	**($)**
Options outstanding at January 1	**56.3**	**55.1**	**58.5**	**52.1**
Granted	18.6	66.1	18.5	58.3
Sold or exercised	(13.3)	52.5	(17.0)	48.3
Forfeited or expired	(2.8)	60.3	(3.7)	56.1
Outstanding at December 31	**58.8**	**58.9**	**56.3**	**55.1**
Exercisable at December 31	**17.8**	**53.2**	**19.0**	**51.9**

All share options were granted at an exercise price which was equal to the market price of the American Depositary Receipts (ADRs) at the grant date. The weighted average exercise price during the period the share options were sold or exercised in 2013 was $52.54. The weighted average share price at the dates of sale or exercise was $70.27.

26. Equity-Based Participation Plans of Associates (Continued)

The following table summarizes information about ADR options outstanding at December 31, 2013:

	ADR options outstanding		
Range of exercice prices ($)	**Number outstanding**	**Average remaining contractual life**	**Weighted average exercise price**
	(millions)	**(years)**	**($)**
45–49	5.3	4.1	46.6
50–54	6.5	5.3	53.9
55–59	29.6	7.0	57.9
65–69	17.4	9.0	66.1
Total	**58.8**	**7.1**	**58.9**

Long-Term Performance Plan

The Long-Term Performance Plan (LTPP) is an equity plan for key executives designed to drive long-term shareholder value creation. The LTPP is offered to selected executives, who are in key positions and have a significant impact on the long-term success of Novartis. It is capped at 200% of target. The rewards are based on rolling three year global performance objectives focused on the Novartis Economic Value Added (NVA) measured annually. The NVA is calculated based on Group operating income 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 LTPP only allows a payout if the actual NVA exceeds predetermined target thresholds.

At the beginning of every performance period, plan participants are granted RSUs, which are converted into Novartis shares after the performance period.

At the end of the three-year performance period, the Compensation Committee adjusts the number of RSUs earned based on actual performance. RSUs are converted into unrestricted Novartis shares without an additional vesting period. In the United States, awards may also be delivered in cash under the United States deferred compensation plan.

The expense recorded in the 2013 income statement related to this plan amounted to $37 million (2012: $34 million, 2011: $40 million). In 2013, a total of 0.4 million RSUs (2012: 0.4 million RSUs) were granted to 140 key executives participating in this plan.

Other Share Awards

Selected associates may exceptionally receive special 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

26. Equity-Based Participation Plans of Associates (Continued)

levels. In exceptional circumstances, special equity grants 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.

Restricted special awards generally have a five-year vesting period. Worldwide 392 associates at different levels in the organization were awarded restricted shares in 2013. The expense recorded for such special share awards in the 2013 consolidated income statement amounted to $50 million (2012: $24 million, 2011: $27 million). During 2013, a total of 0.8 million restricted shares and RSUs (2012: 0.8 million restricted shares and RSUs) were granted to executives and selected associates.

In addition, in 2013, Board members received 0.1 million unrestricted shares with a market value of $5 million as part of their remuneration.

Leveraged Share Savings Plans

A number of associates in certain countries and certain key executives worldwide are encouraged to invest their annual incentive in a share savings plan, which is capped at 200% of target. Under the share savings plan, they will receive their annual incentive awards fully or partially in Novartis shares in lieu of cash. As a reward for their participation in the share savings plan, Novartis matches their investments in shares after a holding period of three or five years.

Novartis currently has three share savings plans:

– Worldwide 29 key executives were invited to participate in a leveraged share savings plan based on their performance in 2012. Instead of cash, their annual incentive was elected to be awarded partly or entirely in shares. The elected number of shares were delivered in 2013 and are 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 Switzerland, the Employee Share Ownership Plan (ESOP) was available to 13,341 associates in 2012. Participants within this plan may choose to receive the 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 of Novartis shares invested under the ESOP, each participant will receive one free matching share for every two Novartis shares invested. A total of 5,557 associates chose to receive shares under the ESOP for their performance in 2012 and the shares were delivered in 2013.

– In the United Kingdom, 2,600 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 2013, 1,404 participants elected to participate in this plan.

Associates may only participate in one of these plans in any given year.

The expense recorded in the 2013 consolidated income statement related to these plans amounted to $419 million (2012: $459 million, 2011: $429 million). During 2013, a total of 5.7 million shares (2012: 5.7 million shares) were granted to participants of these plans.

26. Equity-Based Participation Plans of Associates (Continued)

Summary of non-vested share movements

The table below provides a summary of non-vested share movements (restricted shares, RSUs and ADRs) for all plans:

	2013		2012	
	Number of shares in millions	Fair value in $ m	Number of shares in millions	Fair value in $ m
Non-vested shares at January 1	**23.7**	**1,329.7**	**20.8**	**1,180.1**
Granted	14.8	932.2	16.3	935.3
Vested	(13.4)	(776.9)	(12.0)	(701.2)
Forfeited	(2.0)	(114.4)	(1.4)	(84.5)
Non-vested shares at December 31	**23.1**	**1,370.6**	**23.7**	**1,329.7**

Alcon, Inc., Equity Plans granted to associates prior to the merger

The expense recorded in the 2013 consolidated income statement relating to equity-based compensation awards granted to Alcon, Inc., associates prior to the merger on April 8, 2011 amounted to $31 million (2012: $55 million). There were no grants in 2013 and 2012.

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.

Share options and share-settled appreciation rights

Share options entitle the recipient to purchase Novartis shares at the closing market price of the former Alcon, Inc., share on the day of grant divided by the conversion factor.

Share-settled appreciation rights (SSAR) entitle the participant to receive, in the form of Novartis shares, the difference between the values of the former Alcon, Inc., share at the date of grant, converted into Novartis shares using the conversion factor, and the Novartis share price at the date of exercise.

26. Equity-Based Participation Plans of Associates (Continued)

The following table shows the activity associated with the converted Novartis share options and SSARs during 2013 and 2012:

	Number of options	Weighted average exercise price	Number of SSARs	Weighted average exercise price
	(millions)	($)	(millions)	($)
Outstanding at January 1, 2012	**4.5**	**23.5**	**8.4**	**34.2**
Exercised	(2.5)	20.9	(4.6)	31.9
Outstanding at December 31, 2012	**2.0**	**26.7**	**3.8**	**36.3**
Exercisable at December 31, 2012	**1.9**	**26.7**	**3.8**	**36.3**
Outstanding at January 1, 2013	**2.0**	**26.7**	**3.8**	**36.3**
Exercised	(0.8)	25.1	(0.7)	36.6
Outstanding at December 31, 2013	**1.2**	**27.7**	**3.1**	**36.3**
Exercisable at December 31, 2013	**1.2**	**27.7**	**3.1**	**36.3**

Restricted share units

Restricted Share Units (RSUs) entitle the recipient to receive a specified number of Novartis shares on the date of vesting. RSUs will vest and become transferable upon satisfaction of the conditions set forth in the restricted share unit award agreements, generally three years following the grant date. The compensation expense is recognized over the required service period, generally three years following the day of grant. Holders of RSUs have no voting rights and receive dividend equivalents prior to vesting.

At December 31, 2013, there were 1.5 million Novartis RSUs outstanding with a fair value of $124 million.

27. Transactions with Related Parties and a Closely Affiliated Person

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 2013, *Lucentis* sales of $2.4 billion (2012: $2.4 billion, 2011: $2.0 billion) have been recognized by Novartis.

27. Transactions with Related Parties and a Closely Affiliated Person (Continued)

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 2013, Novartis recognized total sales of *Xolair* of $613 million (2012: $504 million, 2011: $478 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 $570 million in 2013 (2012: $514 million, 2011: $396 million).

Furthermore, Novartis has several patent license, supply and distribution agreements with Roche. Novartis entities held no Roche bonds at December 31, 2013 (2012: $20 million, 2011: $20 million).

Executive Officer and Non-Executive Director Compensation

During 2013, there were 12 Executive Committee members and Permanent Attendees (“Executive Officers”), including those who stepped down during the year (12 members in 2012 also including those who stepped down, 12 members in 2011 also including those who stepped down).

The total compensation for members of the Executive Committee and the 15 Non-Executive Directors (12 in 2012, 11 in 2011) using the Group’s accounting policies for equity-based compensation and pension benefits was as follows:

	Executive Officers			Non-Executive Directors			Total		
	2013	2012	2011	2013	2012	2011	2013	2012	2011
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Benefits other than equity-based amounts	16.0	14.2	13.7	8.6	8.1	11.7	24.6	22.3	25.4
Post-employment benefits	1.9	2.1	1.9	1.4	0.2	0.2	3.3	2.3	2.1
Termination benefits	4.0	2.2	5.1				4.0	2.2	5.1
Equity-based compensation	46.5	54.5	53.3	5.7	16.4	28.2	52.2	70.9	81.5
Total	**68.4**	**73.0**	**74.0**	**15.7**	**24.7**	**40.1**	**84.1**	**97.7**	**114.1**

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 above table excludes amounts for any grants made to any of the current Executive Officers and non-Executive Directors by Alcon, Inc., prior to its merger into Novartis AG on April 8, 2011, since these were granted by this company’s independent Compensation Committee.

27. Transactions with Related Parties and a Closely Affiliated Person (Continued)

During 2012, a non-executive director exercised an option and acquired Group assets at fair market values, based on independent external valuation reports, of CHF 11.6 million (approximately $12.0 million).

2013 Transactions with the Company's former Chairman, Dr. Daniel Vasella

The Group considers that its former chairman, Dr. Vasella was a related party for the purposes of disclosure in these consolidated financial statements up to the expiration of his Board membership and Chairmanship at the Group's Annual General Meeting held on February 22, 2013. Compensation in Dr. Vasella's capacity as Board member and Chairman up to the end of his terms in February 2013 are included in the above Executive Officer and Non-Executive Director Compensation table. For the period thereafter, Novartis is voluntarily disclosing transactions with Dr. Vasella as a "closely affiliated person".

During 2013, Novartis agreed with Dr. Vasella to cancel his non-compete agreement with Novartis and all related conditional compensation following his term as Chairman. Accordingly, a provision of CHF 72 million related to this agreement, accrued in prior periods, was reversed in 2013. This amount is not reflected in the above Executive Officer and Non-Executive Director Compensation table.

Since the 2013 AGM, when he stepped down, Dr. Vasella has provided certain transitional services, including select board mandates with subsidiaries of the Group, to support the ad-interim Chairman and the new Chairman. For his services during this transition period, from the AGM on February 22, 2013 to October 31, 2013, Dr. Vasella received cash compensation of CHF 2.7 million, and 31,724 unrestricted shares on October 31, 2013 (market value of the shares at the time of delivery was CHF 2.2 million). During the same period, Novartis reimbursed the cost of Dr. Vasella's professional legal and financial advice amounting to CHF 161,983, and the cost of terminating his life insurance, amounting to CHF 60,166. For this period, a total amount of CHF 5.1 million was paid to him.

Dr. Vasella has subsequently been available to Novartis, at the CEO's request and discretion, to provide coaching to high potential Novartis associates and speeches at key Novartis events. This agreement became effective on November 1, 2013 and will last until the end of 2016. Dr. Vasella will be compensated at a rate of $25,000 per day, with an annual guaranteed minimum fee of $250,000 for each of the calendar years 2014, 2015 and 2016. During November and December 2013, Dr. Vasella did not provide any coaching to associates and did not receive any compensation for this period.

Given the decision of Novartis not to build the Novartis Corporate Learning Center in Risch, Zug, Switzerland, Dr. Vasella has an option to acquire the respective real estate from a consolidated entity for a price corresponding to the average of two independent external evaluation reports. Novartis considers this transaction as not financially material.

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, 2013 the Group's commitments with respect to these leases, including estimated payment dates, were as follows:

	2013
	$ m
2014	336
2015	225
2016	159
2017	109
2018	84
Thereafter	1,969
Total	**2,882**
Expense of current year	**384**

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, 2013 the Group's commitments to make payments under those agreements, and their estimated timing, were as follows:

	Unconditional commitments	Potential milestone payments	Total 2013
	$ m	$ m	$ m
2014	131	326	457
2015	78	333	411
2016	45	164	209
2017	37	199	236
2018	27	324	351
Thereafter	32	535	567
Total	**350**	**1,881**	**2,231**

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.

28. Commitments and Contingencies (Continued)

Contingencies

Group companies have to observe the laws, government orders and regulations of the country in which they operate.

The Group's potential environmental remediation liability is assessed based on a risk assessment and investigation of the various sites identified by the Group as at risk for environmental remediation exposure. The Group's future remediation expenses are affected by a number of uncertainties. These uncertainties include, but are not limited to, the method and extent of remediation, the percentage of material attributable to the Group at the remediation sites relative to that attributable to other parties, and the financial capabilities of the other potentially responsible parties.

A number of Group companies are currently involved in administrative proceedings, litigations and investigations arising out of the normal conduct of their business. These litigations include product liabilities, governmental investigations and other legal matters. Whilst provisions have been made for probable losses that management deems to be reasonable or appropriate there are uncertainties connected with these estimates.

Note 20 contains a more extensive discussion of these matters.

In the opinion of management, however, the outcome of these actions will not materially affect the Group's financial position but could be material to the results of operations or cash flow in a given period.

29. Financial Instruments—Additional Disclosures

Balance Sheet Disclosures	Note	2013[1]	2012[1]
		$ m	$ m
Cash and cash equivalents	16	**6,687**	**5,552**
Financial assets—measured at fair value through other comprehensive income			
Available-for-sale marketable securities			
Debt securities	16	323	1,084
Equity securities	16	47	68
Fund investments	16	11	23
Total available-for-sale marketable securities		**381**	**1,175**
Available-for-sale long-term financial investments			
Equity securities	13	824	661
Fund investments	13	52	13
Total available-for-sale long-term financial investments		**876**	**674**
Total financial assets—measured at fair value through other comprehensive income		**1,257**	**1,849**
Financial assets—measured at amortized costs			
Trade receivables and other current assets (excluding pre-payments)[2]	15/17	12,620	12,533
Accrued interest on debt securities and time deposits	16	5	12
Time deposits with original maturity more than 90 days	16	1,931	1,240
Long-term loans and receivables, advances, security deposits[2]	13	647	443
Total financial assets—measured at amortized costs		**15,203**	**14,228**
Financial assets—measured at fair value through the consolidated income statement			
Derivative financial instruments	16	121	140
Total financial assets—measured at fair value through the consolidated income statement		**121**	**140**
Total financial assets		**23,268**	**21,769**
Financial liabilities—measured at amortized costs			
Current financial debt			
Interest bearing accounts of associates	21	1,718	1,541
Bank and other financial debt	21	1,323	1,270
Commercial paper	21	1,042	963
Currrent portion of non-current debt	21	2,590	2,009
Total current financial debt		**6,673**	**5,783**
Non-current financial debt			
Straight bonds	19	12,909	14,783
Liabilities to banks and other financial institutions	19	919	1,004
Finance lease obligations	19	4	3
Current portion of non-current debt	19	(2,590)	(2,009)
Total non-current financial debt		**11,242**	**13,781**
Trade payables[2]		**6,148**	**5,593**
Total financial liabilites—measured at amortized costs		**24,063**	**25,157**
Financial liabilities—measured at fair value through the consolidated income statement			
Contingent consideration	20/22	572	573
Derivative financial instruments	21	103	162
Total financial liabilities—measured at fair value through the consolidated income statement		**675**	**735**
Total financial liabilities		**24,738**	**25,892**

(1) Except for straight bonds (see Note 19) the carrying amount is a reasonable approximation of fair value.

(2) 2013 excluding financial assets and liabilities of disposal group held for sale

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, 2013 and 2012. Contract or underlying principal amounts indicate the volume of business outstanding at the consolidated balance sheet date and do not represent amounts at risk. The fair values are determined by reference to market prices or standard pricing models that used observable market inputs at December 31, 2013 and 2012.

	Contract or underlying principal amount		Positive fair values		Negative fair values	
	2013	2012	2013	2012	2013	2012
	$ m	$ m	$ m	$ m	$ m	$ m
Currency related instruments						
Forward foreign exchange rate contracts	10,137	10,517	117	120	(100)	(160)
Over-the-Counter currency options	2,427	2,644	4	20	(3)	(1)
Total of currency related instruments	**12,564**	**13,161**	**121**	**140**	**(103)**	**(161)**
Interest rate related instruments						
Interest rate swaps		33				(1)
Total of interest rate related instruments		**33**				**(1)**
Total derivative financial instruments included in marketable securities and in current financial debts	**12,564**	**13,194**	**121**	**140**	**(103)**	**(162)**

The following table shows by currency contract or underlying principal amount the derivative financial instruments at December 31, 2013 and 2012:

December 31, 2013	EUR	$	JPY	Other	Total
	$ m	$ m	$ m	$ m	$ m
Currency related instruments					
Forward foreign exchange rate contracts	3,727	3,802	230	2,378	10,137
Over-the-Counter currency options	827	1,600			2,427
Total of currency related instruments	**4,554**	**5,402**	**230**	**2,378**	**12,564**
Total derivative financial instruments	**4,554**	**5,402**	**230**	**2,378**	**12,564**

29. Financial Instruments—Additional Disclosures (Continued)

December 31, 2012	EUR	$	JPY	Other	Total
	$ m	$ m	$ m	$ m	$ m
Currency related instruments					
Forward foreign exchange rate contracts	3,760	3,169	704	2,884	10,517
Over-the-Counter currency options		2,125		519	2,644
Total of currency related instruments	**3,760**	**5,294**	**704**	**3,403**	**13,161**
Interest rate related instruments					
Interest rate swaps				33	33
Total of interest rate related instruments				**33**	**33**
Total derivative financial instruments	**3,760**	**5,294**	**704**	**3,436**	**13,194**

Derivative financial instruments effective for hedge accounting purposes

At the end of 2013 and 2012 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 types of 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.

29. Financial Instruments—Additional Disclosures (Continued)

Level 3 inputs are unobservable for the asset or liability. The assets generally included in this 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.

2013	Level 1	Level 2	Level 3	Valued at amortized cost	Total
	$ m	$ m	$ m	$ m	$ m
Available-for-sale marketable securities					
Debt securities	294	29			323
Equity securities	21		26		47
Fund investments			11		11
Total available-for-sale marketable securities	**315**	**29**	**37**		**381**
Time deposits with original maturity more than 90 days				1,931	1,931
Derivative financial instruments		121			121
Accrued interest on debt securities				5	5
Total marketable securities, time deposits and derivative financial instruments	**315**	**150**	**37**	**1,936**	**2,438**
Financial investments and long-term loans					
Available-for-sale financial investments	458		366		824
Fund investments			52		52
Long-term loans and receivables, advances, security deposits[1]				647	647
Total financial investments and long-term loans	**458**		**418**	**647**	**1,523**
Financial liabilities					
Contingent consideration			(572)		(572)
Derivative financial instruments		(103)			(103)
Total financial liabilities at fair value		**(103)**	**(572)**		**(675)**

(1) excluding financial assets of disposal group held for sale of $7 million

29. Financial Instruments—Additional Disclosures (Continued)

2012	Level 1	Level 2	Level 3	Valued at amortized cost	Total
	$ m	$ m	$ m	$ m	$ m
Available-for-sale marketable securities					
Debt securities	1,056	28			1,084
Equity securities	45		23		68
Fund investments			23		23
Total available-for-sale marketable securities	**1,101**	**28**	**46**		**1,175**
Time deposits with original maturity more than 90 days				1,240	1,240
Derivative financial instruments		140			140
Accrued interest on debt securities				12	12
Total marketable securities, time deposits and derivative financial instruments	**1,101**	**168**	**46**	**1,252**	**2,567**
Financial investments and long-term loans					
Available-for-sale financial investments	302		359		661
Fund investments			13		13
Long-term loans and receivables, advances, security deposits				443	443
Total financial investments and long-term loans	**302**		**372**	**443**	**1,117**
Financial liabilities					
Contingent consideration			(573)		(573)
Derivative financial instruments		(162)			(162)
Total financial liabilities at fair value		**(162)**	**(573)**		**(735)**

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:

2013	Equity securities	Fund investments	Available-for-sale financial investments	Contingent consideration
	$ m	$ m	$ m	$ m
January 1	**23**	**36**	**359**	**573**
Fair value gains recognized in the consolidated income statement		3	32	(39)
Fair value losses (including impairments and amortizations) recognized in the consolidated income statement			(52)	81
Gains recognized in the consolidated statement of comprehensive income	3	4	25	
Purchases		7	86	
Payments				(43)
Proceeds from sales		(21)	(80)	
At equity investments reclassified due to loss of significant influence		33		
Reclassification			(6)	
Currency translation effects		1	2	
December 31	**26**	**63**	**366**	**572**
Total of gains and impairments, net recognized in the consolidated income statement for assets and liabilities held at December 31, 2013		3	(20)	42

29. Financial Instruments—Additional Disclosures (Continued)

2012	Equity securities	Fund investments	Available-for-sale financial investments	Contingent consideration
	$ m	$ m	$ m	$ m
January 1	**20**	**44**	**331**	**482**
Impact of business combinations				41
Fair value gains recognized in the consolidated income statement			101	(61)
Fair value losses (including impairments and amortizations) recognized in the consolidated income statement		(1)	(29)	114
Gains/(losses) recognized in the consolidated statement of comprehensive income	2	2	(13)	
Purchases	1		99	
Payments				(75)
Proceeds from sales		(10)	(150)	
At equity investments reclassified due to loss of significant influence			9	
Reclassification			8	72
Currency translation effects		1	3	
December 31	**23**	**36**	**359**	**573**
Total of gains and impairments, net recognized in the consolidated income statement for assets and liabilities held at December 31, 2012		(1)	72	53

No significant transfers from one level to the other occurred during the reporting period. Gains and losses associated with Level 3 available-for-sale marketable securities are recorded in the consolidated income statement under "Other financial income and expense" and gains and losses associated with Level 3 available-for-sale financial investments are recorded in the consolidated income statement under "Other expense" or "Other income", respectively.

If the pricing parameters for the Level 3 input were to change for equity securities and fund investments by 5% and for available-for-sale financial investments by 10% positively or negatively, respectively, this would change the amounts recorded in the consolidated statement of comprehensive income by $4 million or $37 million, respectively (2012: $3 million and $36 million).

For the determination of the fair value of a contingent consideration various unobservable inputs are used. A change in these inputs might result in a significantly higher or lower fair value measurement. The significance and usage of these inputs may vary amongst the existing contingent considerations due to differences in the triggering events for payments or in the nature of the asset the contingent consideration relates to. Amongst others, the probability of success, sales forecast and assumptions regarding the timing and different scenarios of triggering events are used. The inputs are interrelated.

29. Financial Instruments—Additional Disclosures (Continued)

Nature and extent of risks arising from financial instruments

Market Risk

Novartis is exposed to market risk, primarily related to foreign currency exchange rates, interest rates and the market value of the investments of liquid funds. The Group actively monitors and seeks to reduce, where it deems it appropriate to do so, fluctuations in these exposures. It is the Group's policy and practice to enter into a variety of derivative financial instruments to manage the volatility of these exposures and to enhance the yield on the investment of liquid funds. It does not enter any financial transactions containing a risk that cannot be quantified at the time the transaction is concluded. In addition, it does not sell short assets it does not have, or does not know it will have, in the future. The Group only sells existing assets or enters into transactions and future transactions (in the case of anticipatory hedges) that it confidently expects it will have in the future, based on past experience. In the case of liquid funds, the Group writes call options on assets it has or it writes put options on positions it wants to acquire and has the liquidity to acquire. The Group expects that any loss in value for these instruments generally would be offset by increases in the value of the underlying transactions.

Foreign currency Exchange Rate Risk

The Group uses the $ as its reporting currency. As a result, the Group is exposed to foreign currency exchange movements, primarily in European, Japanese and other Asian and Latin American currencies. Consequently, it enters into various contracts that reflect the changes in the value of foreign currency exchange rates to preserve the value of assets, commitments and anticipated transactions. Novartis also uses forward contracts and foreign currency option contracts to hedge certain anticipated net revenues in foreign currencies.

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.

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 control. The most significant country in this respect is Venezuela, where the Group has approximately $220 million of cash in the country, which is only slowly being approved for remittance outside the country. As a result the Group is exposed to a potential income statement financial result devaluation loss on its total intercompany balances with subsidiaries in Venezuela and related net investments, which at December 31, 2013 amounted to approximately $340 million and $35 million, respectively. The Group used the official exchange rate as published by CADIVI (Venezuelan Commission for the Administration of Foreign Currency) of VEF 4.3/$ until the devaluation on February 8, 2013 and VEF 6.3/$ since then for the consolidation of the financial statements of the Venezuelan subsidiaries.

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

29. Financial Instruments—Additional Disclosures (Continued)

commodity futures, forward and option contracts to manage fluctuations in prices of anticipated purchases.

Interest Rate Risk

The Group addresses its net exposure to interest rate risk mainly through the ratio of its fixed rate financial debt to variable rate financial debt contained in its total financial debt portfolio. To manage this mix, Novartis may enter into interest rate swap agreements, in which it exchanges periodic payments based on a notional amount and agreed upon fixed and variable interest rates.

Equity Risk

The Group may purchase equities as investments of its liquid funds. As a policy, it limits its holdings in an unrelated company to less than 5% of its liquid funds. Potential investments are thoroughly analyzed. Call options are written on equities that the Group owns, and put options are written on equities which the Group wants to buy and for which cash is available.

Credit Risk

Credit risks arise from the possibility that customers may not be able to settle their obligations as agreed. To manage this risk the Group periodically assesses the financial reliability of customers, taking into account their financial position, past experience and other factors. Individual risk limits are set accordingly.

The Group's largest customer accounts for approximately 10% of net sales and the second and third largest customers account for 9% and 7% of net sales (2012: 10%, 9% and 8% 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 9%, 7% and 5%, respectively, of the Group's trade receivables at December 31, 2013. There is no other significant concentration of credit risk (2012: 8%, 7% and 6% respectively).

Counterparty Risk

Counterparty risk encompasses issuer risk on marketable securities, settlement risk on derivative and money market contracts and credit risk on cash and time deposits. Issuer risk is reduced by only buying securities which are at least AA− rated. Settlement and credit risk is reduced by the policy of entering into transactions with counterparties that are usually at least AA− rated banks or financial institutions. For short-term investments less than six months 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. Novartis has policies that limit the amount of credit exposure to any financial institution. 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.

The Group's cash and cash equivalents are held with major regulated financial institutions, the three largest ones hold approximately 21.8%, 18.4% and 8.9%, respectively (2012: 19.8%, 15.5% and 10.9%, respectively).

29. Financial Instruments—Additional Disclosures (Continued)

The Group does not expect any losses from non-performance by these counterparties and does not have any significant grouping of exposures to financial sector or country risk.

Liquidity Risk

Liquidity risk is defined as the risk that the Group could not be able to settle or meet its obligations on time or at a reasonable price. Group Treasury is responsible for liquidity, funding as well as settlement management. In addition, liquidity and funding risks, related processes and policies are overseen by management. Novartis manages its liquidity risk on a consolidated basis based on business needs, tax, capital or regulatory considerations, if applicable, through numerous sources of financing in order to maintain flexibility. Management monitors the Group's net debt or liquidity position through rolling forecasts on the basis of expected cash flows.

29. Financial Instruments—Additional Disclosures (Continued)

The following table sets forth how management monitors net debt or liquidity based on details of the remaining contractual maturities of current financial assets and liabilities excluding trade receivables and payables and contingent considerations at December 31, 2013 and 2012:

December 31, 2013	Due or due within one month	Due later than one month but less than three months	Due later than three months but less than one year	Due later than one year but less than five years	Due after five years	Total
	$ m	$ m	$ m	$ m	$ m	$ m
Current assets						
Marketable securities and time deposits	12	1,933	101	179	87	2,312
Commodities	97					97
Derivative financial instruments and accrued interest	26	97	3			126
Cash and cash equivalents	6,187	500				6,687
Total current financial assets	**6,322**	**2,530**	**104**	**179**	**87**	**9,222**
Non-current liabilities						
Financial debt				(5,201)	(6,041)	(11,242)
Financial debt—undiscounted				*(5,212)*	*(6,087)*	*(11,299)*
Total non-current financial debt				**(5,201)**	**(6,041)**	**(11,242)**
Current liabilities						
Financial debt	(2,896)	(2,270)	(1,507)			(6,673)
Financial debt—undiscounted	*(2,896)*	*(2,270)*	*(1,507)*			*(6,673)*
Derivative financial instruments	(44)	(37)	(22)			(103)
Total current financial debt	**(2,940)**	**(2,307)**	**(1,529)**			**(6,776)**
Net debt	**3,382**	**223**	**(1,425)**	**(5,022)**	**(5,954)**	**(8,796)**

29. Financial Instruments—Additional Disclosures (Continued)

December 31, 2012	Due or due within one month	Due later than one month but less than three months	Due later than three months but less than one year	Due later than one year but less than five years	Due after five years	Total
	$ m	$ m	$ m	$ m	$ m	$ m
Current assets						
Marketable securities and time deposits		1,240	26	543	606	2,415
Derivative financial instruments and accrued interest	36	106	10			152
Cash and cash equivalents	3,852	1,700				5,552
Total current financial assets	**3,888**	**3,046**	**36**	**543**	**606**	**8,119**
Non-current liabilities						
Financial debt				(7,829)	(5,952)	(13,781)
Financial debt—undiscounted				*(7,848)*	*(6,002)*	*(13,850)*
Total non-current financial debt				**(7,829)**	**(5,952)**	**(13,781)**
Current liabilities						
Financial debt	(2,607)	(764)	(2,412)			(5,783)
Financial debt—undiscounted	*(2,607)*	*(764)*	*(2,413)*			*(5,784)*
Derivative financial instruments	(60)	(54)	(48)			(162)
Total current financial debt	**(2,667)**	**(818)**	**(2,460)**			**(5,945)**
Net debt	**1,221**	**2,228**	**(2,424)**	**(7,286)**	**(5,346)**	**(11,607)**

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, 2013	Due or due within one month	Due later than one month but less than three months	Due later than three months but less than one year	Total
	$ m	$ m	$ m	$ m
Derivative financial instruments and accrued interest on derivative financial instruments				
Potential outflows in various currencies—from financial derivative liabilities	(3,648)	(6,007)	(2,476)	(12,131)
Potential inflows in various currencies—from financial derivative assets	3,627	5,989	2,417	12,033

December 31, 2012	Due or due within one month	Due later than one month but less than three months	Due later than three months but less than one year	Total
	$ m	$ m	$ m	$ m
Derivative financial instruments and accrued interest on derivative financial instruments				
Potential outflows in various currencies—from financial derivative liabilities	(3,483)	(3,691)	(2,330)	(9,504)
Potential inflows in various currencies—from financial derivative assets	3,458	3,714	2,285	9,457

29. Financial Instruments—Additional Disclosures (Continued)

Other contractual liabilities which are not part of management's monitoring of the net debt or liquidity consist of the following items:

December 31, 2013	Due later than one month but less than three months	Due later than three months but less than one year	Due later than one year but less than five years	Due after five years	Total
	$ m	$ m	$ m	$ m	$ m
Contractual interest on non-current liabilities	(236)	(236)	(1,146)	(830)	(2,448)
Trade payables[1]	(6,148)				(6,148)

[1] excluding trade payables of disposal group held for sale of $38 million

December 31, 2012	Due later than one month but less than three months	Due later than three months but less than one year	Due later than one year but less than five years	Due after five years	Total
	$ m	$ m	$ m	$ m	$ m
Contractual interest on non-current liabilities	(236)	(275)	(1,368)	(1,082)	(2,961)
Trade payables	(5,593)				(5,593)

Capital Risk Management

Novartis strives to maintain a strong credit rating. In managing its capital, Novartis focuses on maintaining a strong balance sheet. Moody's rated the Group as Aa3 for long-term maturities and P-1 for short-term maturities and Standard & Poor's had a rating of AA− for long-term and A-1+ for short-term maturities. Fitch had a long-term rating of AA and a short-term rating of F1+.

The Group's debt/equity ratio improved slightly to 0.24:1 at December 31, 2013 compared to 0.28:1 at the beginning of the year.

Value at Risk

The Group uses a value at risk (VAR) computation to estimate the potential ten-day loss in the fair value of its financial instruments.

A ten-day period is used because of an assumption that not all positions could be undone in one day given the size of the positions. Apart from contingent consideration, finance lease obligations, and long-term loans and receivables, advances and security deposits the VAR computation includes all

29. Financial Instruments—Additional Disclosures (Continued)

financial assets and financial liabilities as set forth above in this Note. Trade payables and receivables are considered only to the extent they comprise a foreign currency exposure. In addition, commodities are included in the computation.

The VAR estimates are made assuming normal market conditions, using a 95% confidence interval. The Group uses a "Delta Normal" model to determine the observed inter-relationships between movements in interest rates, stock markets and various currencies. These inter-relationships are determined by observing interest rate, stock market movements and forward foreign currency rate movements over a sixty-day period for the calculation of VAR amounts.

The estimated potential ten-day loss in pre-tax income from the Group's foreign currency instruments, the estimated potential ten-day loss of its equity holdings, and the estimated potential ten-day loss in fair value of its interest rate sensitive instruments (primarily financial debt and investments of liquid funds under normal market conditions) as calculated in the VAR model are the following:

	2013	2012
	$ m	$ m
All financial instruments	195	183
Analyzed by components:		
Instruments sensitive to foreign currency exchange rates	131	61
Instruments sensitive to equity market movements	27	40
Instruments sensitive to interest rates	93	86

The average, high, and low VAR amounts are as follows:

2013	Average	High	Low
	$ m	$ m	$ m
All financial instruments	188	238	150
Analyzed by components:			
Instruments sensitive to foreign currency exchange rates	156	244	115
Instruments sensitive to equity market movements	39	56	24
Instruments sensitive to interest rates	115	195	68

2012	Average	High	Low
	$ m	$ m	$ m
All financial instruments	262	351	183
Analyzed by components:			
Instruments sensitive to foreign currency exchange rates	141	255	61
Instruments sensitive to equity market movements	41	59	30
Instruments sensitive to interest rates	93	129	57

The VAR computation is a risk analysis tool designed to statistically estimate the maximum potential ten day loss from adverse movements in foreign currency exchange rates, equity prices and interest rates under normal market conditions. The computation does not purport to represent actual losses in fair value on earnings to be incurred by the Group, nor does it consider the effect of favorable changes in market rates. The Group cannot predict actual future movements in such market rates and it does not

29. Financial Instruments—Additional Disclosures (Continued)

claim that these VAR results are indicative of future movements in such market rates or to be representative of any actual impact that future changes in market rates may have on the Group's future results of operations or financial position.

In addition to these VAR analyses, the Group uses stress testing techniques that aim to reflect a worst case scenario on the marketable securities which are monitored by Group Treasury. For these calculations, the Group uses the six-months period with the worst performance observed over the past twenty years in each category. For 2013 and 2012, the worst case loss scenario was calculated as follows:

	2013	2012
	$ m	$ m
All financial instruments	24	284
Analyzed by components:		
Instruments sensitive to foreign currency exchange rates	7	212
Instruments sensitive to equity market movements	12	26
Instruments sensitive to interest rates	5	46

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. Restatement Information

Impact of Introducing Revised Accounting Standard on Employee Benefits in 2013

The Group introduced the revised IFRS accounting standard IAS 19 on *Employee Benefits*, on January 1, 2013. The principal impact of this is that the return on pension plan assets and the interest calculated on the defined benefit obligations now use the same interest rate reflecting the current market yield of high-quality corporate bonds. Previously the return on plan assets was calculated based on the higher long-term expected return on assets, so the adoption of the new accounting standard increases the annual cost of post-employment benefits included in Corporate Other Expense. It has also been required to restate for the amortization of previously unrecognized past service credits. As required by the new standard, the Group's 2012 and 2011 consolidated financial statements have been retrospectively restated to reflect these changes. For the full year 2012, the impact of these restatements is an additional expense of $318 million before tax ($235 million after tax), offset by an adjustment of the actuarial losses recognized in consolidated comprehensive income and for the full year 2011, an additional expense of $218 million before tax ($173 million after tax), offset by an adjustment of the actuarial losses recognized in consolidated comprehensive income.

Furthermore, the revised IAS 19 requires the immediate recognition of past service costs in the consolidated income statement, which were previously only recognized upon vesting. Due to the required retroactive implementation of revised IAS 19, Novartis has restated its December 31, 2010/January 1, 2011, December 31, 2011 and December 31, 2012 consolidated balance sheets so that past service credits of $35 million, $77 million and $69 million, respectively net were recognized against other non-current liabilities with a corresponding increase in consolidated equity. The related tax impact amounted to $13 million, $28 million and $25 million, respectively.

30. Restatement Information (Continued)

Extract of Restated 2012 and 2011 Consolidated Income Statement Information

	Published 2012	Adjustment	Restated 2012	Published 2011	Adjustment	Restated 2011
	$ m	$ m	$ m	$ m	$ m	$ m
Other income	1,187	(138)	1,049	1,354	(162)	1,192
Other expense	(1,859)	(180)	(2,039)	(3,116)	(56)	(3,172)
Operating income	**11,511**	**(318)**	**11,193**	**10,998**	**(218)**	**10,780**
Income before taxes	**11,243**	**(318)**	**10,925**	**10,773**	**(218)**	**10,555**
Taxes	(1,625)	83	(1,542)	(1,528)	45	(1,483)
Net income	**9,618**	**(235)**	**9,383**	**9,245**	**(173)**	**9,072**
Attributable to:						
Shareholders of Novartis AG	*9,505*	*(235)*	*9,270*	*9,113*	*(173)*	*8,940*
Non-controlling interests	*113*		*113*	*132*		*132*
Basic earnings per share ($)	3.93	(0.10)	3.83	3.83	(0.08)	3.75
Diluted earnings per share ($)	3.89	(0.10)	3.79	3.78	(0.08)	3.70

30. Restatement Information (Continued)

Extract of Restated December 31, 2012, 2011 and 2010 Consolidated Balance Sheet Information

	Published 2012	Adjustment	Restated 2012	Published 2011	Adjustment	Restated 2011	Published 2010	Adjustment	Restated 2010
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Assets									
Non-current assets									
Deferred tax assets	7,390	(25)	7,365	5,857	(28)	5,829	5,240	(13)	5,227
Total non-current assets	**96,212**	**(25)**	**96,187**	**93,412**	**(28)**	**93,384**	**96,633**	**(13)**	**96,620**
Current assets									
Total assets	**124,216**	**(25)**	**124,191**	**117,496**	**(28)**	**117,468**	**123,318**	**(13)**	**123,305**
Equity and liabilities									
Equity									
Reserves	68,184	44	68,228	64,949	49	64,998	62,364	22	62,386
Issued share capital and reserves attributable to Novartis AG shareholders	**69,093**	**44**	**69,137**	**65,844**	**49**	**65,893**	**63,196**	**22**	**63,218**
Total equity	**69,219**	**44**	**69,263**	**65,940**	**49**	**65,989**	**69,769**	**22**	**69,791**
Liabilities									
Non-current liabilities									
Provisions and other non-current liabilities	9,879	(69)	9,810	7,792	(77)	7,715	6,842	(35)	6,807
Total non-current liabilities	**30,946**	**(69)**	**30,877**	**28,408**	**(77)**	**28,331**	**28,891**	**(35)**	**28,856**
Total liabilities	**54,997**	**(69)**	**54,928**	**51,556**	**(77)**	**51,479**	**53,549**	**(35)**	**53,514**
Total equity and liabilities	**124,216**	**(25)**	**124,191**	**117,496**	**(28)**	**117,468**	**123,318**	**(13)**	**123,305**

No restated December 31, 2011 consolidated balance sheet has been presented in the primary consolidated financial statements as the adjustments are immaterial to this consolidated balance sheet.

31. Events Subsequent to the December 31, 2013 Consolidated Balance Sheet Date

Dividend proposal for 2013 and approval of the Group's 2013 consolidated financial statements

On January 28, 2014, the Novartis AG Board of Directors proposed the acceptance of the 2013 consolidated financial statements of the Novartis Group for approval by the Annual General Meeting on February 25, 2014. Furthermore, also on January 28, 2014, the Board proposed a dividend of CHF 2.45 per share to be approved at the Annual General Meeting on February 25, 2014. If approved, total dividend payments would amount to approximately $6.8 billion (2012: $6.1 billion).

31. Events Subsequent to the December 31, 2013 Consolidated Balance Sheet Date (Continued)

Divestment of Vaccines and Diagnostics' blood transfusion unit

On January 9, 2014, Novartis completed the divestment of its blood transfusion diagnostics unit to the Spanish company, Grifols S.A., for $1.7 billion in cash. The estimated pre-tax gain on this transaction, subject to finalization of the accounting, will be approximately $0.9 billion.

Restructuring Announcements

During January 2014, the Pharmaceuticals Division announced plans to change the size and structure of the US Primary Care Business Unit, a shift of positions within Switzerland and announced the closure of a production facility in Suffern, New York, US.

We anticipate that these three initiatives in the US and Switzerland will contribute to an exceptional charge of approximately $150 million being recorded in the first quarter of 2014.

32. Principal Group Subsidiaries and Associated Companies

As at December 31, 2013		Share/paid-in capital[1]	Equity interest %	Activities			
Argentina							
Novartis Argentina S.A., Buenos Aires	ARS	231.3 m	100		◆		▲
Alcon Laboratorios Argentina S.A., Buenos Aires	ARS	80.0 m	100		◆		
Sandoz S.A., Buenos Aires	ARS	182.7 m	100		◆		
Australia							
Novartis Australia Pty Ltd., North Ryde, NSW	AUD	11.0 m	100	■			
Novartis Pharmaceuticals Australia Pty Ltd., North Ryde, NSW	AUD	3.8 m	100		◆		▲
Alcon Laboratories (Australia) Pty Ltd., Frenchs Forest, NSW	AUD	2.6 m	100		◆		
Sandoz Pty Ltd., North Ryde, NSW	AUD	11.6 m	100		◆		
Novartis Consumer Health Australasia Pty Ltd., Melbourne, Victoria	AUD	7.6 m	100		◆	▼	
Novartis Animal Health Australasia Pty Ltd., North Ryde, NSW	AUD	3.0 m	100		◆		▲
Austria							
Novartis Austria GmbH, Vienna	EUR	1.0 m	100	■			
Novartis Pharma GmbH, Vienna	EUR	1.1 m	100		◆		
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, Dhaka	BDT	162.5 m	60		◆	▼	
Belgium							
N.V. Novartis Pharma S.A., Vilvoorde	EUR	7.1 m	100		◆		
S.A. Alcon-Couvreur N.V., Puurs	EUR	360.6 m	100		◆	▼	
N.V. Alcon S.A., Vilvoorde	EUR	141,856	100		◆		
N.V. Sandoz S.A., Vilvoorde	EUR	19.2 m	100		◆		
N.V. Novartis Consumer Health S.A., Vilvoorde	EUR	4.3 m	100		◆		
Bermuda							
Triangle International Reinsurance Ltd., Hamilton	CHF	1.0 m	100	■			
Novartis Securities Investment Ltd., Hamilton	CHF	30,000	100	■			
Novartis International Pharmaceutical Ltd., Hamilton	CHF	20,000	100	■	◆	▼	▲
Trinity River Insurance Co.Ltd., Hamilton	$	370,000	100	■			
Brazil							
Novartis Biociências S.A., São Paulo	BRL	265.0 m	100		◆	▼	
Sandoz do Brasil Indústria Farmacêutica Ltda., Cambé, PR	BRL	190.0 m	100		◆	▼	▲
Novartis Saúde Animal Ltda., São Paulo	BRL	50.7 m	100		◆	▼	
Canada							
Novartis Pharmaceuticals Canada Inc., Dorval/ Quebec	CAD	0[2]	100		◆		▲
Alcon Canada Inc., Mississauga, Ontario	CAD	0[2]	100		◆		
CIBA Vision Canada Inc., Mississauga, Ontario	CAD	1	100		◆	▼	
Sandoz Canada Inc., Boucherville, Quebec	CAD	76.8 m	100		◆	▼	▲
Novartis Consumer Health Canada Inc., Mississauga, Ontario	CAD	2	100		◆		
Novartis Animal Health Canada Inc., Charlottetown, Prince Edward Island	CAD	2	100		◆		▲

32. Principal Group Subsidiaries and Associated Companies (Continued)

As at December 31, 2013	Share/paid-in capital[1]		Equity interest %	Activities		
Chile						
Novartis Chile S.A., Santiago de Chile	CLP	2.0 bn	100	◆		
Alcon Laboratorios Chile Limitada, Santiago de Chile	CLP	2.0 bn	100	◆		
China						
Beijing Novartis Pharma Co., Ltd., Beijing	$	30.0 m	100	◆	▼	
Novartis Pharmaceuticals (HK) Limited, Hong Kong	HKD	200	100	◆		
China Novartis Institutes for BioMedical Research Co. Ltd., Shanghai	$	133.0 m	100			▲
Suzhou Novartis Pharma Technology Co. Ltd., Changshu	$	97.4 m	100		▼	
Shanghai Novartis Trading Ltd., Shanghai	$	2.5 m	100	◆		
Alcon Hong Kong Limited, Hong Kong	HKD	77,000	100	◆		
Alcon (China) Ophthalmic Product Co., Ltd., Beijing	$	2.2 m	100	◆		
Sandoz (China) Pharmaceutical Co., Ltd., Zhongshan	$	22.0 m	100	◆	▼	
Novartis Vaccines and Diagnostics (HK) Ltd., Hong Kong	HKD	80.0 m	100	◆	▼	
Zhejiang Tianyuan Bio-Pharmaceutical Co., Ltd., Hangzhou	CNY	46.8 m	85	◆	▼	
Shanghai Novartis Animal Health Co., Ltd., Shanghai	CHF	21.6 m	100	◆	▼	
Colombia						
Novartis de Colombia S.A., Santafé de Bogotá	COP	7.9 bn	100	◆	▼	
Laboratorios Alcon de Colombia S.A., Santafé de Bogotá	COP	20.9 m	100	◆		
Croatia						
Sandoz d.o.o., Zagreb	HRK	25.6 m	100	◆		
Czech Republic						
Novartis s.r.o., Prague	CZK	51.5 m	100	◆		
Sandoz s.r.o., Prague	CZK	44.7 m	100	◆		
Denmark						
Novartis Healthcare A/S, Copenhagen	DKK	14.0 m	100	◆		
Sandoz A/S, Copenhagen	DKK	8.0 m	100	◆		
Ecuador						
Novartis Ecuador S.A., Quito	$	4.0 m	100	◆		
Egypt						
Novartis Pharma S.A.E., Cairo	EGP	33.8 m	99	◆	▼	
Sandoz Egypt Pharma S.A.E., New Cairo	EGP	250,000	100	◆		
Finland						
Novartis Finland Oy, Espoo	EUR	459,000	100	◆		
Alcon Finland Oy, Vantaa	EUR	84,094	100	◆		
France						
Novartis Groupe France S.A., Rueil-Malmaison	EUR	103.0 m	100	■		
Novartis Pharma S.A.S., Rueil-Malmaison	EUR	43.4 m	100	◆	▼	▲
Laboratoires Alcon S.A., Rueil-Malmaison	EUR	12.9 m	100	◆	▼	
Sandoz S.A.S., Levallois-Perret	EUR	5.4 m	100	◆		
Novartis Vaccines and Diagnostics S.A.S., Suresnes	EUR	1.5 m	100	◆		
Novartis Santé Familiale S.A.S., Rueil-Malmaison	EUR	21.9 m	100	◆	▼	
Novartis Santé Animale S.A.S., Rueil-Malmaison	EUR	900,000	100	◆	▼	

32. Principal Group Subsidiaries and Associated Companies (Continued)

As at December 31, 2013	Share/paid-in capital[1]		Equity interest %	Activities			
Germany							
Novartis Deutschland GmbH, Wehr	EUR	155.5 m	100	■			
Novartis Pharma GmbH, Nuremberg	EUR	25.6 m	100		◆		▲
Novartis Pharma Produktions GmbH, Wehr	EUR	2.0 m	100			▼	
Alcon Pharma GmbH, Freiburg	EUR	512,000	100		◆		
WaveLight GmbH, Erlangen	EUR	6.6 m	100		◆		
CIBA Vision GmbH, Grosswallstadt	EUR	15.4 m	100		◆	▼	▲
Sandoz International GmbH, Holzkirchen	EUR	100,000	100	■			
Sandoz Pharmaceuticals GmbH, Holzkirchen	EUR	5.1 m	100		◆		
Sandoz Industrial Products GmbH, Frankfurt a. M.	EUR	2.6 m	100		◆	▼	
1 A Pharma GmbH, Oberhaching	EUR	26,000	100		◆		
Salutas Pharma GmbH, Barleben	EUR	42.1 m	100		◆	▼	
Hexal AG, Holzkirchen	EUR	93.7 m	100	■	◆	▼	▲
Novartis Vaccines and Diagnostics GmbH, Marburg	EUR	5.0 m	100		◆	▼	▲
Novartis Vaccines Vertriebs GmbH, Holzkirchen	EUR	26,000	100		◆		
Novartis Consumer Health GmbH, Munich	EUR	14.6 m	100		◆	▼	▲
Novartis Tiergesundheit GmbH, Munich	EUR	256,000	100		◆		
LTS Lohmann Therapie-Systeme AG, Andernach	EUR	31.2 m	43	■			
Gibraltar							
Novista Insurance Limited, Gibraltar	CHF	130.0 m	100	■			
Greece							
Novartis (Hellas) S.A.C.I., Metamorphosis/Athens	EUR	23.4 m	100		◆		
Alcon Laboratories Hellas Commercial & Industrial S.A., Maroussi/Athens	EUR	5.7 m	100		◆		
Hungary							
Novartis Hungary Healthcare Limited Liability Company, Budapest	HUF	545.6 m	100		◆		
Sandoz Hungary Limited Liability Company, Budapest	HUF	883.0 m	100		◆		
India							
Novartis India Limited, Mumbai	INR	159.8 m	75		◆		
Novartis Healthcare Private Limited, Mumbai	INR	60.0 m	100		◆		
Alcon Laboratories (India) Private Limited, Bangalore	INR	1.1 bn	100		◆		
Sandoz Private Limited, Mumbai	INR	32.0 m	100		◆	▼	
Indonesia							
PT Novartis Indonesia, Jakarta	IDR	7.7 bn	100		◆	▼	
PT CIBA Vision Batam, Batam	IDR	11.9 bn	100			▼	
Ireland							
Novartis Ireland Limited, Dublin	EUR	25,000	100		◆		
Novartis Ringaskiddy Limited, Ringaskiddy, County Cork	EUR	2.0 m	100			▼	
Alcon Laboratories Ireland Limited, Cork City	EUR	541,251	100			▼	
Italy							
Novartis Farma S.p.A., Origgio	EUR	18.2 m	100	■	◆	▼	▲
Alcon Italia S.p.A., Milan	EUR	3.7 m	100		◆		
Sandoz S.p.A., Origgio	EUR	679,900	100		◆		
Sandoz Industrial Products S.p.A., Rovereto	EUR	2.6 m	100			▼	
Novartis Vaccines and Diagnostics S.r.l., Siena	EUR	41.6 m	100		◆	▼	▲
Novartis Consumer Health S.p.A., Origgio	EUR	2.9 m	100		◆		

32. Principal Group Subsidiaries and Associated Companies (Continued)

As at December 31, 2013	Share/paid-in capital[1]		Equity interest %	Activities		
Japan						
Novartis Holding Japan K.K., Tokyo	JPY	10.0 m	100	■		
Novartis Pharma K.K., Tokyo	JPY	6.0 bn	100		◆	▲
Alcon Japan Ltd., Tokyo	JPY	500.0 m	100		◆	
CIBA Vision K.K., Tokyo	JPY	100.0 m	100		◆	
Sandoz K.K., Tokyo	JPY	100.0 m	100		◆	▼ ▲
Novartis Animal Health K.K., Tokyo	JPY	50.0 m	100		◆	▲
Luxembourg						
Novartis Investments S.à r.l., Luxembourg-Ville	$	2.6 bn	100	■		
Novartis Finance S.A., Luxembourg-Ville	$	100,000	100	■		
Malaysia						
Novartis Corporation (Malaysia) Sdn. Bhd., Kuala Lumpur	MYR	3.3 m	100		◆	
Alcon Laboratories (Malaysia) Sdn. Bhd., Petaling Jaya	MYR	1.0 m	100		◆	
CIBA Vision Johor Sdn. Bhd., Gelang Patah	MYR	5.0 m	100			▼
Mexico						
Novartis Farmacéutica, S.A. de C.V., Mexico City	MXN	205.0 m	100		◆	▼
Alcon Laboratorios, S.A. de C.V., Mexico City	MXN	5.9 m	100		◆	▼
Sandoz S.A. de C.V., Mexico City	MXN	468.2 m	100		◆	▼
Netherlands						
Novartis Netherlands B.V., Arnhem	EUR	1.4 m	100	■		
Novartis Pharma B.V., Arnhem	EUR	4.5 m	100		◆	
Alcon Nederland B.V., Breda	EUR	18,151	100		◆	
Sandoz B.V., Almere	EUR	907,570	100		◆	▼
Novartis Consumer Health B.V., Breda	EUR	23,830	100		◆	▼
New Zealand						
Novartis New Zealand Ltd., Auckland	NZD	820,000	100		◆	
Norway						
Novartis Norge AS, Oslo	NOK	1.5 m	100		◆	
Pakistan						
Novartis Pharma (Pakistan) Limited, Karachi	PKR	1.8 bn	100		◆	▼
Panama						
Novartis Pharma (Logistics), Inc., Ciudad de Panama	$	10,000	100		◆	
Peru						
Novartis Biosciences Peru S.A., Lima	PEN	6.1 m	100		◆	
Philippines						
Novartis Healthcare Philippines, Inc., Makati/Manila	PHP	298.8 m	100		◆	
Sandoz Philippines Corporation, Manila	PHP	30.0 m	100		◆	▼
Poland						
Novartis Poland Sp. z o.o., Warszawa	PLN	44.2 m	100		◆	
Alcon Polska Sp. z o.o., Warszawa	PLN	750,000	100		◆	
Sandoz Polska Sp. z o.o., Warszawa	PLN	25.6 m	100		◆	
Lek S.A., Strykow	PLN	11.4 m	100		◆	▼

32. Principal Group Subsidiaries and Associated Companies (Continued)

As at December 31, 2013	Share/paid-in capital[1]		Equity interest %	Activities			
Portugal							
Novartis Portugal SGPS Lda., Sintra	EUR	500,000	100	■			
Novartis Farma—Produtos Farmacêuticos S.A., Sintra	EUR	2.4 m	100		◆		
Alcon Portugal-Produtos e Equipamentos Oftalmologicos Lda., Paco d'Arcos	EUR	4.5 m	100		◆		
Sandoz Pharmaceutica Lta., Sintra	EUR	5.0 m	100		◆		
Novartis Consumer Health—Produtos Farmacêuticos e Nutrição Lda., Sintra	EUR	100,000	100		◆		
Puerto Rico							
Ex-Lax, Inc., Humacao	$	10,000	100			▼	
Alcon (Puerto Rico) Inc., Catano	$	15.5	100		◆		
Romania							
Sandoz S.R.L., Targu-Mures	RON	105.2 m	100		◆	▼	
Russian Federation							
Novartis Pharma LLC, Moscow	RUB	20.0 m	100		◆		
Alcon Farmacevtika LLC, Moscow	RUB	44.1 m	100		◆		
ZAO Sandoz, Moscow	RUB	57.4 m	100		◆		
Novartis Neva LLC, St. Petersburg	RUB	500.0 m	100			▼	
Novartis Consumer Health LLC, Moscow	RUB	80.0 m	100		◆		
Saudi Arabia							
Saudi Pharmaceutical Distribution Co. Ltd., Riyadh	SAR	26.8 m	75		◆		
Singapore							
Novartis (Singapore) Pte Ltd., Singapore	SGD	100,000	100		◆		
Novartis Singapore Pharmaceutical Manufacturing Pte Ltd., Singapore	SGD	45.0 m	100			▼	
Novartis Asia Pacific Pharmaceuticals Pte Ltd., Singapore	SGD	39.0 m	100		◆		
Novartis Institute for Tropical Diseases Pte Ltd., Singapore	SGD	2,004	100				▲
Alcon Singapore Manufacturing Pte Ltd., Singapore	SGD	101,000	100			▼	
CIBA Vision Asian Manufacturing and Logistics Pte Ltd., Singapore	SGD	1.0 m	100			▼	
Slovakia							
Novartis Slovakia s.r.o., Bratislava	EUR	2.0 m	100		◆		
Slovenia							
Lek Pharmaceuticals d.d., Ljubljana	EUR	48.4 m	100	■	◆	▼	▲
Sandoz Pharmaceuticals d.d., Ljubljana	EUR	1.5 m	100		◆		
South Africa							
Novartis South Africa (Pty) Ltd., Kempton Park	ZAR	86.3 m	100		◆		
Alcon Laboratories (South Africa) (Pty) Ltd., Bryanston, Gauteng	ZAR	201,820	100		◆		
Sandoz South Africa (Pty) Ltd., Kempton Park	ZAR	3.0 m	100		◆	▼	
South Korea							
Novartis Korea Ltd., Seoul	KRW	24.5 bn	99		◆		
Alcon Korea Ltd., Seoul	KRW	33.8 bn	100		◆		

32. Principal Group Subsidiaries and Associated Companies (Continued)

As at December 31, 2013	Share/paid-in capital[1]		Equity interest %	Activities			
Spain							
Novartis Farmacéutica, S.A., Barcelona	EUR	63.0 m	100	■	◆	▼	
Alcon Cusi S.A., El Masnou	EUR	11.6 m	100		◆	▼	
Sandoz Farmacéutica, S.A., Madrid	EUR	270,450	100		◆		
Sandoz Industrial Products, S.A., Les Franqueses del Vallés/ Barcelona	EUR	9.3 m	100		◆	▼	▲
Novartis Vaccines and Diagnostics, S.L., Barcelona	EUR	675,450	100		◆		
Novartis Consumer Health, S.A., Barcelona	EUR	876,919	100		◆		
Sweden							
Novartis Sverige Participations AB, Täby/Stockholm	SEK	1.0 m	100	■			
Novartis Sverige AB, Täby/Stockholm	SEK	5.0 m	100		◆		
Alcon Sverige AB, Bromma	SEK	100,000	100		◆		
CIBA Vision Nordic AB, Askim/Göteborg	SEK	2.5 m	100		◆		
Switzerland							
Novartis International AG, Basel	CHF	10.0 m	100	■			
Novartis Holding AG, Basel	CHF	100.2 m	100	■			
Novartis Research Foundation, Basel	CHF	29.3 m	100	■			
Novartis Foundation for Management Development, Basel	CHF	100,000	100	■			
Novartis Foundation for Employee Participation, Basel	CHF	100,000	100	■			
Novartis Sanierungsstiftung, Basel	CHF	2.0 m	100	■			
Novartis Pharma AG, Basel	CHF	350.0 m	100	■	◆	▼	▲
Novartis Pharma Services AG, Basel	CHF	20.0 m	100		◆		
Novartis Pharma Schweizerhalle AG, Schweizerhalle	CHF	18.9 m	100			▼	
Novartis Pharma Stein AG, Stein	CHF	251,000	100			▼	▲
Novartis Pharma Schweiz AG, Rotkreuz	CHF	5.0 m	100		◆		▲
Alcon Switzerland SA, Rotkreuz	CHF	100,000	100		◆		
Alcon Pharmaceuticals Ltd., Fribourg	CHF	200,000	100	■	◆		
ESBATech, a Novartis Company GmbH, Schlieren	CHF	14.0 m	100				▲
Sandoz AG, Basel	CHF	5.0 m	100	■	◆		▲
Sandoz Pharmaceuticals AG, Rotkreuz	CHF	100,000	100		◆		
Novartis Vaccines and Diagnostics AG, Basel	CHF	800,000	100	■			▲
Novartis Vaccines and Diagnostics Services AG, Basel	CHF	100,000	100	■		▼	
Novartis Consumer Health S.A., Prangins	CHF	30.0 m	100	■	◆	▼	▲
Novartis Consumer Health Schweiz AG, Rotkreuz	CHF	250,000	100		◆		
Novartis Animal Health AG, Basel	CHF	101,000	100	■	◆	▼	▲
Novartis Centre de Recherche Santé Animale S.A., St. Aubin	CHF	250,000	100				▲
Roche Holding AG, Basel	CHF	160.0 m	33/6[3]	■			
Taiwan							
Novartis (Taiwan) Co., Ltd., Taipei	TWD	170.0 m	100		◆	▼	
Thailand							
Novartis (Thailand) Limited, Bangkok	THB	230.0 m	100		◆		
Alcon Laboratories (Thailand) Ltd., Bangkok	THB	205.1 m	100		◆		
Turkey							
Novartis Saglik, Gida ve Tarim Ürünleri Sanayi ve Ticaret A.S., Istanbul	TRY	98.0 m	100		◆	▼	
Alcon Laboratuvarlari Ticaret A.S., Istanbul	TRY	25.2 m	100		◆		
Sandoz Ilaç Sanayi ve Ticaret A.S., Istanbul	TRY	165.2 m	100		◆	▼	

32. Principal Group Subsidiaries and Associated Companies (Continued)

As at December 31, 2013	Share/paid-in capital[1]		Equity interest %	Activities			
United Kingdom							
Novartis UK Limited, Frimley/Camberley	GBP	25.5 m	100	■			
Novartis Pharmaceuticals UK Limited, Frimley/ Camberley	GBP	5.4 m	100		◆	▼	▲
Novartis Grimsby Limited, Frimley/Camberley	GBP	230 m	100			▼	
Alcon Eye Care (UK) Limited, Frimley/Camberley	GBP	550,000	100		◆		
Sandoz Limited, Frimley/Camberley	GBP	2.0 m	100		◆		
Novartis Vaccines and Diagnostics Limited, Frimley/ Camberley	GBP	100	100		◆	▼	
Novartis Consumer Health UK Limited, Horsham	GBP	25,000	100		◆	▼	
Novartis Animal Health UK Limited, Frimley/ Camberley	GBP	100,000	100		◆		▲
United States of America							
Novartis Corporation, East Hanover, NJ	$	72.2 m	100	■			
Novartis Finance Corporation, New York, NY	$	1,002	100	■			
Novartis Capital Corporation, New York, NY	$	1	100	■			
Novartis Pharmaceuticals Corporation, East Hanover, NJ	$	5.2 m	100		◆	▼	▲
Novartis Institutes for BioMedical Research, Inc., Cambridge, MA	$	1	100				▲
Novartis Institute for Functional Genomics, Inc., San Diego, CA	$	21,000	100				▲
Genoptix, Inc., Carlsbad, CA	$	1	100		◆		▲
Alcon Laboratories, Inc., Fort Worth, TX	$	1,000	100	■	◆	▼	
Alcon Refractive Horizons, LLC, Fort Worth, TX	$	10	100			▼	
Alcon Research, Ltd., Fort Worth, TX	$	12.5	100			▼	▲
Alcon LenSx, Inc., Alisio Viejo, CA	$	100	100			▼	
CIBA Vision Corporation, Duluth, GA	$	301.3 m	100	■	◆	▼	▲
Sandoz Inc., Princeton, NJ	$	25,000	100		◆	▼	▲
Fougera Pharmaceuticals, Inc., Melville, NY	$	1	100		◆		▲
Eon Labs, Inc., Princeton, NJ	$	1	100		◆	▼	
Falcon Pharmaceuticals, Ltd., Forth Worth, TX	$	10	100		◆		
Novartis Vaccines and Diagnostics, Inc., Cambridge, MA	$	3.0	100		◆	▼	▲
Novartis Consumer Health, Inc., Parsippany, NJ	$	0[2]	100		◆	▼	▲
Novartis Animal Health US, Inc., Greensboro, NC	$	100	100		◆	▼	▲
Idenix Pharmaceuticals, Inc., Cambridge, MA	$	134,001	25	■			
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: Algeria, Bosnia/ Herzegovina, Bulgaria, Dominican Republic, Guatemala, the Former Yugoslav Republic of Macedonia, Morocco, Ukraine and Uruguay.

(1) Share/paid-in capital may not reflect the taxable share/paid-in capital amount and does not include any paid-in surplus.

(2) shares without par value

(3) Approximately 33% of voting shares; approximately 6% of total net income and equity attributable to Novartis

m = million; bn = billion

32. Principal Group Subsidiaries and Associated Companies (Continued)

The following describe the various types of entities within the Group:

- ■ **Holding/Finance:** This entity is a holding company and/or performs finance functions for the Group.
- ◆ **Sales:** This entity performs sales and marketing activities for the Group.
- ▼ **Production:** This entity performs manufacturing and/or production activities for the Group.
- ▲ **Research:** This entity performs research and development activities for the Group.

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