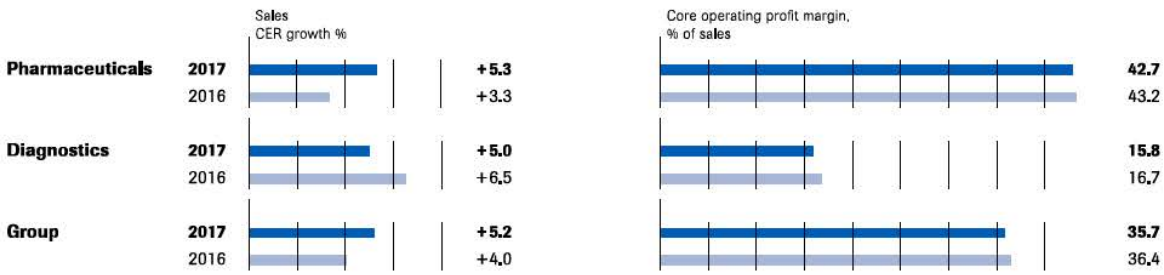
Finance Report 2017

Finance in Brief

Key results



	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)	% of sales 2017	% of sales 2016
IFRS results						
Sales	53,299	50,576	+5	+5		
Operating profit	13,003	14,069	−8	−8	24.4	27.8
Net income	8,825	9,733	−9	−9	16.6	19.2
Net income attributable to Roche shareholders	8,633	9,576	−10	−10	16.2	18.9
Diluted EPS (CHF)	10.04	11.13	−10	−10		
Dividend per share (CHF)	8.30[1]	8.20	+1			
Core results						
Research and development	10,392	9,915	+5	+5	19.5	19.6
Core operating profit	19,012	18,420	+3	+3	35.7	36.4
Core EPS (CHF)	15.34	14.53	+6	+5		
Free cash flow						
Operating free cash flow	17,827	14,086	+27	+26	33.4	27.9
Free cash flow	13,420	9,130	+47	+47	25.2	18.1

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)
Net debt	(6,963)	(13,248)	−47	−45
Capitalisation	47,967	48,757	−2	−1
– Debt	18,960	22,355	−15	−14
– Equity	29,007	26,402	+10	+10

1) Proposed by the Board of Directors.

CER (Constant Exchange Rates): The percentage changes at constant exchange rates are calculated using simulations by reconsolidating both the 2017 and 2016 results at constant exchange rates (the average rates for the year ended 31 December 2016). For the definition of CER see page 148.

Core results and Core EPS (earnings per share): These exclude non-core items such as global restructuring plans and amortisation and impairment of goodwill and intangible assets. This allows an assessment of both the actual results and the underlying performance of the business. A full income statement for the Group and the operating results of the divisions are shown on both an IFRS and core basis. The core concept is fully described on pages 141–144 and reconciliations between the IFRS and core results are given there.

Free cash flow is used to assess the Group's ability to generate the cash required to conduct and maintain its operations. It also indicates the Group's ability to generate cash to finance dividend payments, repay debt and to undertake merger and acquisition activities. The free cash flow concept is used in the internal management of the business. The free cash flow concept is fully described on pages 144–146 and reconciliations between the IFRS cash flow and free cash flow are given there.

Finance – 2017 in Brief

Roche in 2017

The **Roche Group** reported good overall results in 2017. Sales and core earnings per share both grew by 5% at constant exchange rates (CER). IFRS net income decreased by 9% due to significant impairments of goodwill and intangible assets.

Sales

Group sales increased by 5% (CER) to CHF 53.3 billion (5% growth in CHF terms).
Pharmaceuticals sales growth was 5% (CER) due to recently launched medicines Ocrevus, Tecentriq and Alecensa. In oncology there was continued growth in the HER2 franchise, while sales of Avastin decreased due to competitive pressure. Immunology sales increased, led by Xolair and Actemra/RoActemra. Sales of Tamiflu fell due to generic competition in the US. The entry of biosimilars had a negative impact on sales of MabThera/Rituxan in Europe.
Diagnostics sales showed growth of 5% (CER) with the immunodiagnostics business being the major contributor.

Operating results

Core operating profit increased by 3% (CER) to CHF 19.0 billion (3% increase in CHF terms).
Research and development expenditure grew by 5% (CER) to CHF 10.4 billion on a core basis, with the focus on the oncology and immunology therapeutic areas. Research and development costs represented 19.5% of Group sales.
IFRS operating results include non-core expenses (pre-tax) of CHF 6.0 billion. The major factors were CHF 3.5 billion for the impairment of goodwill and intangible assets, CHF 1.7 billion for the amortisation of intangible assets and CHF 1.2 billion from global restructuring plans, notably the Pharmaceuticals Division's strategic realignment of its manufacturing network.

Non-operating results

Financing costs (IFRS) decreased by CHF 0.3 billion to CHF 0.8 billion, driven by lower interest expenses and lower losses on bond redemptions.
Income tax expenses (IFRS) include transitional expenses of CHF 0.1 billion arising from changes to US tax rates. The core effective tax rate was 26.6%.

Net income

IFRS net income decreased by 9% at CER to CHF 8.8 billion (9% decrease in CHF terms).
Core earnings per share increased by 5% at CER (+6% in CHF terms).

Cash flows

Operating free cash flow increased significantly to CHF 17.8 billion. The underlying cash generation in both divisions, lower net working capital and lower capital expenditure led to an increase of operating free cash flow of 26% at CER (27% in CHF terms).
Free cash flow increased by 47% at CER (47% in CHF terms) to CHF 13.4 billion, driven by the higher operating free cash flow as well as lower pension contributions and lower interest paid.

Financial position

Net working capital decreased by 19% (CER), due to higher payables and accrued liabilities and lower inventories offset by an increase in receivables driven by increased sales.
Net debt decreased to CHF 7.0 billion, as the generated free cash flow more than offset the dividends paid. Net debt as a percentage of total assets was 9%.
Credit ratings strong: Moody's at A1 and Standard & Poor's at AA.

Shareholder return

Dividends. A proposal will be made to increase dividends by 1% to CHF 8.30 per share. This will represent the 31st consecutive year of dividend growth and will result in a pay-out ratio of 54.1%, subject to AGM approval.
Total Shareholder Return (TSR) was 9% representing the combined performance of share and non-voting equity security.

Roche Group

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Roche Holding Ltd, Basel

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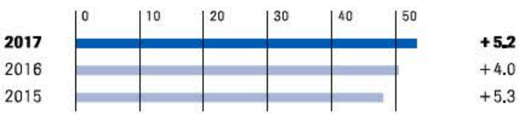
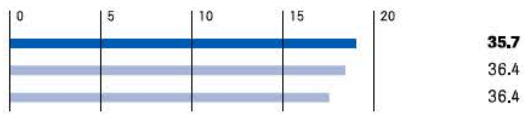
Financial Review

Roche Group results

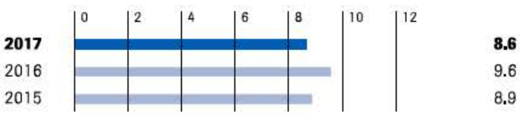
Sales in billions of CHF



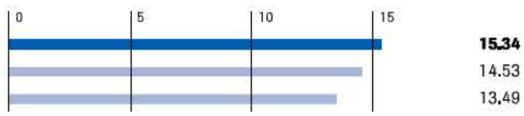
Core operating profit in billions of CHF



Net income attributable to Roche shareholders in billions of CHF



Core EPS in CHF



The Roche Group's results for 2017 showed sales growth of 5% at constant exchange rates (CER), with core operating profit up by 3% and Core EPS up by 5%. The sales growth was driven by the recently launched Pharmaceuticals products Ocrevus, Tecentriq and Alecensa, and by the immunodiagnostics business in the Diagnostics Division. The Group continued supporting the development and launch of new products, and reported growth in core operating profit despite the base effect of income from pension changes in the 2016 results. Operating free cash flow was CHF 17.8 billion, an increase of 26%, due to the cash generated from the business coupled with a decrease in net working capital and lower capital expenditure.

Sales in the Pharmaceuticals Division rose by 5% to CHF 41.2 billion with Ocrevus, Tecentriq and Alecensa contributing CHF 1.4 billion of new sales, representing 65% of the division's growth. In oncology, HER2 franchise sales increased by 7% to CHF 10.1 billion, led by Perjeta. MabThera/Rituxan sales were CHF 7.4 billion, a growth of 1% globally, despite sales in Europe being 11% lower following biosimilar entry. Sales of Avastin were CHF 6.7 billion, a decline of 2% due to competitive pressure. Sales in immunology grew to CHF 7.6 billion, with Xolair and Actemra/RoActemra increasing by 16% and 14% respectively. Sales of Tamiflu fell by 33% due to competition from generics in the US market. Diagnostics Division sales grew by 5%, with the major growth area being Centralised and Point of Care Solutions where sales increased by 7% led by its immunodiagnostics business.

IFRS operating profit was stable in the Pharmaceuticals Division and down by 74% in the Diagnostics Division, with both divisions impacted by impairment charges to goodwill and intangible assets. In Pharmaceuticals core operating profit increased by 4%, while in Diagnostics it remained stable, with the operating profit growth rates of both divisions being impacted by the base effect of income in 2016 from changes to the Group's Swiss pension plans. For Pharmaceuticals, marketing and distribution costs grew by 6% due to the launch of new products, notably Ocrevus and Tecentriq. There was continued investment in research and development, which totalled over CHF 10 billion for the Group. The major areas in Pharmaceuticals were oncology, with Tecentriq and the cancer immunotherapy portfolio being key drivers, immunology and neuroscience. Diagnostics activities increasingly focused on integrated core laboratory and digitalised data management projects and during 2017 the division acquired Viewics, a software company focused on laboratory business analytics.

Operating free cash flow was CHF 17.8 billion, an increase of CHF 3.7 billion or 26%. This was due to the high cash generation of the business, with sales growth exceeding the increases in cash expenses. Furthermore net working capital decreased overall in 2017 after an increase in 2016. The decrease was mainly due to higher payables partially offset by higher receivables. Capital expenditure decreased as well compared to 2016. The free cash flow was CHF 13.4 billion, an increase of CHF 4.3 billion, due to the higher operating free cash flow, lower pension contributions and lower interest payments.

Net income decreased by 9% at CER on an IFRS basis while it increased by 6% on a core basis. In addition to the items described above in the core results, the IFRS results include intangible asset impairment charges totalling CHF 3.5 billion, notably CHF 1.7 billion for the partial impairment of the Esbriet product intangible asset and impairments for the Diagnostics sequencing business of CHF 0.8 billion.

Global restructuring expenses were CHF 1.2 billion, in line with 2016 expenses. There was offsetting income of CHF 0.4 billion from the reversal of contingent consideration arrangements and CHF 0.2 billion of income from the release of legal provisions. Financing costs were lower due to decreasing interest expenses and lower losses on bond redemptions. The changes to US tax rates that will become effective from 1 January 2018 resulted in a transitional expense of CHF 0.1 billion in 2017 arising from the remeasurement of the Group's year-end deferred tax positions. Core EPS increased by 5% at CER, in line with the sales growth of 5%.

In 2017 compared to 2016, the Swiss franc was weaker against the euro and other European currencies and against several major currencies in the Asia-Pacific region. This was partially offset by the stronger Swiss franc against the Japanese yen. The Swiss franc remained stable against the US dollar. The net impact is negligible on the results expressed in Swiss francs compared to constant exchange rates for sales, core operating profit and Core EPS.

Income statement

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)
IFRS results				
Sales	53,299	50,576	+5	+5
Royalties and other operating income	2,447	2,060	+19	+19
Cost of sales	(18,179)	(16,180)	+12	+12
Marketing and distribution	(9,847)	(9,140)	+8	+8
Research and development	(11,292)	(11,532)	−2	−2
General and administration	(3,425)	(1,715)	+100	+100
Operating profit	**13,003**	**14,069**	**−8**	**−8**
Financing costs	(839)	(1,099)	−24	−24
Other financial income (expense)	84	37	+127	+130
Profit before taxes	**12,248**	**13,007**	**−6**	**−6**
Income taxes	(3,423)	(3,274)	+5	+5
Net income	**8,825**	**9,733**	**−9**	**−9**
Attributable to				
– Roche shareholders	8,633	9,576	−10	−10
– Non-controlling interests	192	157	+22	+28
EPS – Basic (CHF)	10.12	11.24	−10	−10
EPS – Diluted (CHF)	10.04	11.13	−10	−10
Core results [1]				
Sales	53,299	50,576	+5	+5
Royalties and other operating income	2,447	2,060	+19	+19
Cost of sales	(14,366)	(13,469)	+7	+6
Marketing and distribution	(9,512)	(9,007)	+6	+6
Research and development	(10,392)	(9,915)	+5	+5
General and administration	(2,464)	(1,825)	+35	+36
Operating profit	**19,012**	**18,420**	**+3**	**+3**
Financing costs	(819)	(1,034)	−21	−21
Other financial income (expense)	75	37	+103	+105
Profit before taxes	**18,268**	**17,423**	**+5**	**+5**
Income taxes	(4,864)	(4,735)	+3	+3
Net income	**13,404**	**12,688**	**+6**	**+6**
Attributable to				
– Roche shareholders	13,192	12,507	+5	+5
– Non-controlling interests	212	181	+17	+22
Core EPS – Basic (CHF)	15.47	14.68	+5	+5
Core EPS – Diluted (CHF)	15.34	14.53	+6	+5

1) See pages 141–144 for the definition of core results and Core EPS.

Sales

In 2017 sales increased by 5% at CER (+5% in CHF; +5% in USD) to CHF 53.3 billion. Sales in the Pharmaceuticals Division rose 5% to CHF 41.2 billion, with growth in the oncology, immunology and neuroscience therapeutic areas. A key growth driver was the additional CHF 1.4 billion of sales for the recently launched products Ocrevus, Tecentriq and Alecensa. These three new products represented 65% of the division's growth and already account for 4% of the division's total sales. MabThera/Rituxan sales were CHF 7.4 billion, a growth of 1% driven by the US growth of 6%. The first biosimilar versions were launched in several EU markets in 2017 and contributed to a decrease of MabThera/Rituxan sales in Europe by 11%. Sales of Avastin were CHF 6.7 billion, a decline of 2% due to competitive pressure. The HER2 franchise continued to grow, with sales increasing by 7%. The main drivers of this growth were increased global demand for Perjeta and higher Herceptin sales, notably in the US. Immunology sales were CHF 7.6 billion, a growth of 9% coming from Actemra/RoActemra (+14%) and Xolair (+16%). Sales of Tamiflu fell by 33% due to competition from generics in the US market. The Diagnostics Division recorded sales of CHF 12.1 billion, an increase of 5%. The major growth area was Centralised and Point of Care Solutions, which represents 60% of the division's sales and which grew by 7%, led by the immunodiagnostics business.

Divisional operating results for 2017

	Pharmaceuticals (CHF m)	Diagnostics (CHF m)	Corporate (CHF m)	Group (CHF m)
Sales	41,220	12,079	–	53,299
Core operating profit	17,601	1,909	(498)	19,012
– margin, % of sales	42.7	15.8	–	35.7
Operating profit	13,242	304	(543)	13,003
– margin, % of sales	32.1	2.5	–	24.4
Operating free cash flow	16,817	1,553	(543)	17,827
– margin, % of sales	40.8	12.9	–	33.4

Divisional operating results – Development of results compared to 2016

	Pharmaceuticals	Diagnostics	Corporate	Group
Sales				
– % increase at CER	+5	+5	–	+5
Core operating profit				
– % increase at CER	+4	0	+22	+3
– margin: percentage point increase	–0.5	–0.8	–	–0.7
Operating profit				
– % increase at CER	0	–74	+27	–8
– margin: percentage point increase	–1.8	–8.0	–	–3.4
Operating free cash flow				
– % increase at CER	+21	+111	+10	+26
– margin: percentage point increase	+5.4	+6.3	–	+5.5

Core operating results

Core operating profit for the Group increased by 3% at CER. For the Pharmaceuticals Division core operating profit increased by 4%, while in the Diagnostics Division it was stable at CHF 1.9 billion. In 2016 there was income of CHF 426 million (pre-tax) from changes to the Group's pension plans in Switzerland. Excluding this item, core operating profit for the Group grew by 6% compared to 2016, with growth of 6% for the Pharmaceuticals Division and 4% for the Diagnostics Division.

Pharmaceuticals Division. The division's core operating profit increased by 4% at CER, which was below the 5% sales increase. There was increased expenditure on research and development, as well as launch expenses for Ocrevus and Tecentriq and other new products. Income from product disposals and other income was CHF 611 million in 2017 compared to CHF 325 million in 2016. The income from the pension plan changes in 2016 was CHF 310 million.

Diagnostics Division. Core operating profit was stable in CER, with an increase of 4% when the 2016 pension changes are excluded. Cost of sales increased due to an unfavourable product mix arising from higher instrument placements, notably in the Asia-Pacific region. Marketing and distribution increased, with higher spending in emerging markets, especially in China. General and administration increased due to the income from pension changes in 2016, with a base effect in 2016 of CHF 77 million.

Acquisitions

In 2017 the Group acquired a 100% controlling interest in mySugr GmbH, which has developed one of the leading mobile diabetes platforms in the market. The total cash consideration was CHF 70 million. In addition the Group acquired a 100% controlling interest in Viewics, Inc. for a consideration of CHF 80 million. Viewics is a software company focused on laboratory business analytics. On 22 December 2017 the Group announced an agreement to fully acquire Ignyta, Inc. with a total transaction value of USD 1.7 billion.

In 2017 there was CHF 353 million of non-core income from contingent consideration provisions, mainly due to the reversal of the remaining provision related to the Seragon acquisition and the partial reversal of the provisions related to the Dutalys and Trophos acquisitions. There were impairment charges of CHF 653 million related to these acquisitions, as noted below in the 'Impairment of goodwill and intangible assets' commentary. In 2016 there was CHF 408 million of non-core income from contingent consideration provisions and related intangible asset impairment charges of CHF 1,072 million. Non-core costs in 2016 also included expenses of CHF 167 million from the release of the Esbriet inventory fair value adjustment, which was fully unwound by mid-2016.

Further details are given in Notes 5 and 29 to the Annual Financial Statements.

Global restructuring plans

During 2017 the Group initiated various resourcing flexibility plans in its Pharmaceuticals Division to address various future challenges including biosimilar competition. The areas of the plans include biologics manufacturing, commercial operations and product development/strategy. The Group also continued with the implementation of several major global restructuring plans initiated in prior years, notably the strategic realignment of the Pharmaceuticals Division's manufacturing network, and programmes to address long-term strategy in the Diagnostics Division.

Global restructuring plans: costs incurred for 2017 in millions of CHF

	Diagnostics[1]	Site consolidation[2]	Other plans[3]	Total
Global restructuring costs				
– Employee-related costs	152	13	258	423
– Site closure costs	48	245	2	295
– Divestment of products and businesses	–	166	–	166
– Other reorganisation expenses	92	160	72	324
Total global restructuring costs	**292**	**584**	**332**	**1,208**
Additional costs				
– Impairment of goodwill	–	–	–	–
– Impairment of intangible assets	–	–	–	–
– Legal and environmental cases	–	46	–	46
Total costs	**292**	**630**	**332**	**1,254**

1) Includes strategy plans in the Diagnostics Division and the Diabetes Care 'Autonomy and Speed' plan.
2) Includes the Pharmaceuticals Division's strategic realignment of its manufacturing network and resourcing flexibility in biologics manufacturing network.
3) Includes plans for resourcing flexibility in the Pharmaceuticals Division's commercial operations and global product development/strategy organisations.

Diagnostics Division. Strategy plans in the Diagnostics Division that were launched in 2016 incurred costs of CHF 212 million mainly for employee-related costs. Spending on other smaller plans within the division was CHF 80 million and included costs related to the 'Autonomy and Speed' initiative in Diabetes Care and certain IT projects.

Site consolidation. On 12 November 2015 the Pharmaceuticals Division announced a strategic realignment of its manufacturing network including exiting from the manufacturing sites at Clarecastle, Ireland; Leganés, Spain; Segrate, Italy; and Florence, US. Costs from this plan in 2017 were CHF 480 million, of which CHF 185 million were non-cash write-downs and accelerated depreciation of property, plant and equipment. Some employee-related provisions were reversed as the most likely scenario for the Segrate site was changed from closure to divestment. The divestments of the Florence, Segrate and Leganés sites have been completed and result in total costs of CHF 201 million. This includes CHF 100 million of accumulated currency translation losses on consolidation that were transferred to the income statement. The expected costs of the environmental remediation at the Clarecastle site were reassessed and resulted in an increase in provisions for environmental remediation. Other plans include the resourcing flexibility in biologics manufacturing network which resulted in headcount reductions in the US and also at the Kaiseraugst site in Switzerland and the exit from the small molecules manufacturing site at Toluca, Mexico.

Other global restructuring plans. The major item was CHF 247 million for resourcing flexibility in the Pharmaceuticals Division, including global field force reductions, notably in the US and Europe. The remaining CHF 85 million includes plans for the outsourcing of IT and other functions to shared service centres and external providers.

Further details are given in Note 6 to the Annual Financial Statements.

Impairment of goodwill and intangible assets

There were impairment charges of CHF 2,572 million in the Pharmaceuticals Division. The largest item was a charge of CHF 1,664 million for the partial impairment of the Esbriet product intangible acquired as part of the InterMune acquisition. An impairment charge was recorded in the first half of 2017 for this intangible asset following lower-than-expected sales of Esbriet in the first half of 2017 relative to the most recent long-term forecasts. The revised long-term forecasts prepared in the second half of 2017 show a further reduction in sales expectations which resulted in an additional impairment charge.

There was a charge of CHF 384 million for the full write-off of the goodwill relating to the Seragon acquisition due to the decision to stop development of the back-up compound acquired. In addition, there was an impairment of CHF 195 million relating to a compound acquired as part of the Trophos acquisition arising from the launch of a competitor product and an impairment of CHF 149 million due to the decision to stop development of one compound with an alliance partner following assessment of clinical and non-clinical data.

There was a related decrease in the contingent consideration provisions, mainly from the Seragon, Trophos and Dutalys acquisitions, which contributed to the income of CHF 353 million noted above in the 'Acquisitions' commentary.

The Diagnostics Division recorded impairment charges of CHF 946 million. The major part of this was in the sequencing business with impairment charges of CHF 674 million against goodwill and CHF 120 million against product intangible assets acquired as part of the Ariosa acquisition. These impairments are due to the latest long-term forecasts projecting a decrease in forecasted cash flows due to changed assumptions around market penetration, pricing and reimbursement and a revised time to market of the single molecule sequencing technology.

In addition, in the molecular diagnostics business, a partial impairment of CHF 152 million was also recorded against the product intangible assets acquired as part of the GeneWeave acquisition. This was also due to a decrease in forecasted cash flows, and follows a change in the timelines for future product development and updated market size assumptions.

Further details are given in Notes 8 and 9 to the Annual Financial Statements.

Pensions and other post-employment benefits

During 2016 operating income of CHF 426 million was recorded for past service costs from changes to the Group's pension plans in Switzerland that were announced in June 2016. This represented the one-time impact of the adjustment of the pension liability for the plan changes. Of this amount, CHF 310 million was recorded in the Pharmaceuticals Division, CHF 77 million in the Diagnostics Division and CHF 39 million in Corporate. The after-tax impact was CHF 341 million. This matter has a base effect on the growth rates shown in the 2017 results.

Further information on the Group's pensions and other post-employment benefits is given in Note 25 to the Annual Financial Statements.

Legal and environmental cases

Based on the development of the various litigations, notably the Accutane case, some of the provisions previously held were released, resulting in income of CHF 219 million in 2017. The expected costs of the environmental remediation at the Clarecastle site in Ireland were reassessed and resulted in an increase in provisions for environmental remediation. There were no other significant developments impacting the 2017 financial results. Further details are given in Note 19 to the Annual Financial Statements.

Treasury and taxation

Core financing costs were CHF 819 million, a decrease of 21%, due to lower interest expenses, lower interest costs of pension plans and lower losses on bond redemption. Core other financial income was CHF 75 million, including net income from equity securities of CHF 162 million, partly offset by net foreign exchange losses of CHF 115 million. Core tax expenses increased by 3% to CHF 4.9 billion and, since this was lower than the increase in profit before tax, the Group's effective core tax rate decreased to 26.6% compared to 27.2% in 2016. This was largely due to mix effects within the manufacturing supply chain.

On 22 December 2017 changes to US tax rates were enacted that will become effective from 1 January 2018. Among the changes is a decrease in the US Federal tax rate from 35% to 21%. These resulted in a transitional expense of CHF 116 million in 2017 arising from the remeasurement of the Group's deferred tax positions which has been treated as a non-core item. Had these new rates applied for the whole of 2017, and excluding any transition impacts, the Group's 2017 effective core tax rate in percentage terms would have been in the low twenties.

Net income and earnings per share

IFRS net income decreased by 9% in Swiss franc terms and at CER and Diluted EPS decreased by 10% in Swiss franc terms and at CER. Core net income increased by 6% and Core EPS increased by 5% at CER. The core basis excludes non-core items such as global restructuring costs, amortisation and impairment of goodwill and intangible assets, and alliance and business combination costs. Core EPS increased by 8% when excluding the base impact from the changes to the Group's Swiss pension plans in 2016.

Net income

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)
IFRS net income	**8,825**	**9,733**	**–9**	**–9**
Reconciling items (net of tax)				
– Global restructuring plans	962	965	0	–1
– Intangible asset amortisation	1,178	912	+29	+29
– Goodwill and intangible asset impairment	2,651	1,146	+131	+132
– Alliances and business combinations	(347)	(222)	+56	+56
– Legal and environmental cases	(30)	57	–	–
– Pension plan settlements	18	(11)	–	–
– Transitional effect of changes in US tax rates	116	–	–	–
– Normalisation of equity compensation plan tax benefit	31	108	–71	–71
Core net income	**13,404**	**12,688**	**+6**	**+6**

Supplementary net income and EPS information is given on pages 141 to 144. This includes calculations of Core EPS and reconciles the core results to the Group's published IFRS results.

Financial position

Financial position

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)
Pharmaceuticals				
Net working capital	3,420	4,582	–25	–24
Long-term net operating assets	23,539	26,174	–10	–8
Diagnostics				
Net working capital	2,594	2,796	–7	–10
Long-term net operating assets	12,849	13,392	–4	–4
Corporate				
Net working capital	(119)	(104)	+14	+15
Long-term net operating assets	(176)	(213)	–16	–21
Net operating assets	**42,105**	**46,627**	**–10**	**–9**
Net debt	(6,963)	(13,248)	–47	–45
Pensions	(6,620)	(6,940)	–5	–9
Income taxes	21	(390)	–	–
Other non-operating assets, net	464	353	+31	+30
Total net assets	**29,007**	**26,402**	**+10**	**+10**

Compared to the start of the year the Swiss franc depreciated significantly against the euro. This had a positive translation impact on balance sheet positions. The appreciation of the Swiss franc against the US dollar had a negative translation impact on net operating assets, which was mostly offset at Group level by the natural hedge from the Group's US dollar-denominated debt. The exchange rates used are given on page 28.

In the Pharmaceuticals Division net working capital decreased by 24% at CER. A major driver was higher liabilities for sales rebates and chargebacks. Another factor was inventories, where write-offs and a decrease in inventory levels for certain mature products were partly offset by higher inventories for launch products. This was offset by the increase in trade receivables due to higher sales and extended post-launch payment terms for Ocrevus in the US. Long-term net operating assets were lower due to the CHF 2.6 billion of impairments of intangible assets. In the Diagnostics Division the decrease in net working capital of 10% at CER was driven by an increase of other payables due to higher liabilities for pending rebates. Inventories decreased due to inventories optimisation initiatives and high demand. The decrease in trade payables followed the lower spending, while trade receivables increased due to higher sales. Long-term net operating assets decreased by 4% due to lower goodwill and intangible assets, partially offset by higher property, plant and equipment and lower provisions.

The decrease in net debt was due to free cash flow of CHF 13.4 billion, partly offset by dividend payments of CHF 7.1 billion. The net pension liability decreased by CHF 0.3 billion to CHF 6.6 billion due to improved asset performance. The net tax liabilities decreased mainly due to the deferred tax impact from the impairment of intangible assets, partially offset by the deferred tax impact from the changes in US tax rates announced in late 2017.

Free cash flow

Free cash flow

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)
Pharmaceuticals	16,817	13,859	+21	+21
Diagnostics	1,553	720	+116	+111
Corporate	(543)	(493)	+10	+10
Operating free cash flow	**17,827**	**14,086**	**+27**	**+26**
Treasury activities	(498)	(1,218)	–59	–59
Taxes paid	(3,909)	(3,738)	+5	+5
Free cash flow	**13,420**	**9,130**	**+47**	**+47**

For the definition of free cash flow and a detailed breakdown see pages 144–146.

The Group's operating free cash flow for 2017 was CHF 17.8 billion, an increase of CHF 3.7 billion or 26% at CER. This reflects the higher cash generation of the business due to improved operating results with sales growth exceeding cash operating expenses. The development of the operating free cash flow was also positively impacted by net working capital, which decreased in 2017 after an increase in 2016. The decrease was mainly due to higher payables partially offset by higher receivables. There is also a base impact from inventories, where the build-up in 2016 was not repeated, and this contributed to the year-on-year growth in operating free cash flow. Capital expenditure was also lower than in the comparative period. The free cash flow in 2017 was CHF 13.4 billion, an increase of CHF 4.3 billion compared to 2016, due to the higher operating free cash flow, lower pension contributions and lower interest payments.

Pharmaceuticals Division operating results

Pharmaceuticals Division operating results

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)
IFRS results				
Sales	41,220	39,103	+5	+5
Royalties and other operating income	2,284	1,944	+17	+18
Cost of sales	(11,978)	(10,393)	+15	+15
Marketing and distribution	(6,960)	(6,391)	+9	+9
Research and development	(9,704)	(10,156)	−4	−4
General and administration	(1,620)	(822)	+97	+98
Operating profit	**13,242**	**13,285**	**0**	**0**
– margin, % of sales	32.1	34.0	−1.9	−1.8
Core results [1]				
Sales	41,220	39,103	+5	+5
Royalties and other operating income	2,284	1,944	+17	+18
Cost of sales	(8,707)	(8,175)	+7	+6
Marketing and distribution	(6,720)	(6,362)	+6	+6
Research and development	(9,036)	(8,588)	+5	+6
General and administration	(1,440)	(1,013)	+42	+43
Core operating profit	**17,601**	**16,909**	**+4**	**+4**
– margin, % of sales	42.7	43.2	−0.5	−0.5
Financial position				
Net working capital	3,420	4,582	−25	−24
Long-term net operating assets	23,539	26,174	−10	−8
Net operating assets	**26,959**	**30,756**	**−12**	**−10**
Free cash flow [2]				
Operating free cash flow	16,817	13,859	+21	+21
– margin, % of sales	40.8	35.4	+5.4	+5.4

1) See pages 141–144 for the definition of core results.
2) See pages 144–146 for the definition of free cash flow.

Sales overview

Pharmaceuticals Division – Sales by therapeutic area

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
Oncology	25,743	24,841	+3	62.5	63.5
Immunology	7,611	6,970	+9	18.5	17.8
Neuroscience	1,542	657	+133	3.7	1.7
Ophthalmology	1,414	1,406	+1	3.4	3.6
Infectious diseases	1,357	1,773	−23	3.3	4.5
Other therapeutic areas	3,553	3,456	+3	8.6	8.9
Total sales	**41,220**	**39,103**	**+5**	**100**	**100**

Pharmaceuticals Division sales increased by 5% at CER to CHF 41.2 billion, with growth in the oncology, immunology and neuroscience therapeutic areas. The main products driving growth were the recently launched medicines Ocrevus, Tecentriq and Alecensa, which contributed CHF 1.4 billion at CER of new sales. These three new products represented 65% of the division's growth in 2017 and already account for 4% of the division's total sales. Other significant growth drivers were Perjeta, Xolair, Actemra/RoActemra and Herceptin. MabThera/Rituxan growth was led by immunology. The first biosimilar versions of MabThera/Rituxan were launched in several EU markets from mid-2017 and led to decreased sales in Europe. Avastin sales declined by 2% under competitive pressure and sales of Tamiflu fell by 33% due to generic competition in the US.

Ocrevus was launched in the US in April 2017 and has had a good uptake with sales of CHF 0.9 billion. The growth of Tecentriq sales was driven mainly by uptake in the US in metastatic urothelial carcinoma and in metastatic non-small cell lung cancer. Alecensa sales were 101% higher, led by the US and Japan. The HER2 franchise continued to grow, with sales increasing by 7%. A main driver of this growth was increased global demand for Perjeta in the neoadjuvant and metastatic settings. Herceptin sales were higher, notably in the US. Sales increases in immunology came from Xolair in the US and increasing use of Actemra/RoActemra in the US and in Europe.

Product sales

Pharmaceuticals Division – Sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
Oncology					
Herceptin	7,014	6,782	+3	17.0	17.3
Avastin	6,688	6,783	–2	16.2	17.3
MabThera/Rituxan[1]	5,832	5,823	0	14.1	14.9
Perjeta	2,196	1,846	+19	5.3	4.7
Kadcyla	914	831	+10	2.2	2.1
Tarceva	843	1,024	–18	2.0	2.6
Tecentriq	487	157	+209	1.2	0.5
Xeloda	453	506	–10	1.1	1.3
Alecensa	362	182	+101	0.9	0.5
Gazyva/Gazyvaro	278	196	+41	0.7	0.5
Others	676	711	–5	1.8	1.8
Total Oncology	**25,743**	**24,841**	**+3**	**62.5**	**63.5**
Immunology					
Actemra/RoActemra	1,926	1,697	+14	4.7	4.3
Xolair	1,742	1,498	+16	4.2	3.8
MabThera/Rituxan[1]	1,556	1,477	+5	3.8	3.8
Esbriet	869	768	+13	2.1	2.0
Pulmozyme	730	685	+6	1.8	1.8
CellCept	697	741	–6	1.7	1.9
Others	91	104	–11	0.2	0.2
Total Immunology	**7,611**	**6,970**	**+9**	**18.5**	**17.8**
Neuroscience					
Ocrevus	869	0	–	2.1	0
Madopar	334	290	+13	0.8	0.7
Others	339	367	–9	0.8	1.0
Total Neuroscience	**1,542**	**657**	**+133**	**3.7**	**1.7**
Ophthalmology					
Lucentis	1,414	1,406	+1	3.4	3.6
Total Ophthalmology	**1,414**	**1,406**	**+1**	**3.4**	**3.6**
Infectious diseases					
Tamiflu	535	794	–33	1.3	2.0
Rocephin	299	298	+1	0.7	0.8
Valcyte/Cymevene	235	306	–23	0.6	0.8
Pegasys	178	259	–32	0.4	0.7
Others	110	116	–6	0.3	0.2
Total Infectious diseases	**1,357**	**1,773**	**–23**	**3.3**	**4.5**
Other therapeutic areas					
Activase/TNKase	1,219	1,108	+10	3.0	2.8
Mircera	505	512	–1	1.2	1.3
NeoRecormon/Epogin	312	328	–5	0.8	0.8
Others	1,517	1,508	+2	3.6	4.0
Total other therapeutic areas	**3,553**	**3,456**	**+3**	**8.6**	**8.9**
Total sales	**41,220**	**39,103**	**+5**	**100**	**100**

1) Total MabThera/Rituxan sales of CHF 7,388 million (2016: CHF 7,300 million) split between oncology and immunology franchises.

MabThera/Rituxan. For non-Hodgkin lymphoma (NHL), chronic lymphocytic leukaemia (CLL), follicular lymphoma (FL) and rheumatoid arthritis (RA) as well as certain types of antineutrophil cytoplasmic antibody (ANCA) associated vasculitis.

MabThera/Rituxan regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	4,133	3,911	+6	55.9	53.6
Europe	1,690	1,879	–11	22.9	25.7
Japan	293	291	+4	4.0	4.0
International	1,272	1,219	+4	17.2	16.7
Total sales	**7,388**	**7,300**	**+1**	**100**	**100**

Sales were 1% higher, driven by growth in the immunology segment. In the US, where MabThera/Rituxan is widely used across nearly all approved indications, sales increased by 6%. Sales were also higher in the International region, particularly in Brazil (+13%) due to higher government sales. Sales in Europe fell by 11%, driven by the launch of biosimilars in several EU markets during the year.

HER2 franchise (Herceptin, Perjeta and Kadcyla). For HER2-positive breast cancer and HER2-positive metastatic (advanced) gastric cancer (Herceptin only).

Herceptin regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	2,697	2,509	+8	38.5	37.0
Europe	2,123	2,055	+2	30.3	30.3
Japan	295	309	–2	4.2	4.6
International	1,899	1,909	–1	27.0	28.1
Total sales	**7,014**	**6,782**	**+3**	**100**	**100**

Perjeta regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	1,013	905	+12	46.1	49.0
Europe	767	628	+21	34.9	34.0
Japan	120	108	+15	5.5	5.9
International	296	205	+42	13.5	11.1
Total sales	**2,196**	**1,846**	**+19**	**100**	**100**

Kadcyla regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	343	316	+9	37.5	38.0
Europe	347	331	+4	38.0	39.8
Japan	70	75	–3	7.7	9.0
International	154	109	+43	16.8	13.2
Total sales	**914**	**831**	**+10**	**100**	**100**

The HER2 franchise grew 7% to CHF 10.1 billion. Herceptin sales were higher by 3%, driven by 8% growth in the US mainly due to continued growth in early and metastatic breast cancer. There was also continued growth in Europe, driven by sales growth in the UK and Italy. Perjeta sales grew in all regions following increased demand in the neoadjuvant and metastatic settings. Kadcyla sales increased in the US and especially in the International region (+43%), with uptake in Turkey being a significant factor.

Avastin. For advanced colorectal, breast, lung, kidney, cervical and ovarian cancer, and relapsed glioblastoma (a type of brain tumour).

Avastin regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	2,894	2,964	–2	43.3	43.7
Europe	1,776	1,841	–5	26.6	27.1
Japan	817	834	+1	12.2	12.3
International	1,201	1,144	+5	17.9	16.9
Total sales	**6,688**	**6,783**	**–2**	**100**	**100**

Overall sales were 2% below prior year. US sales decreased by 2% due to competition from immunotherapy medicines in lung cancer. In Europe sales declined by 5%, mainly driven by the delisting for metastatic breast cancer in France. Sales grew in the International region by 5%, in particular in China where sales increased due to broader market penetration in the lung and colorectal cancer setting. In Japan sales increased by 1% due to increasing volume growth partially offset by the negative impact from bi-annual government price cuts in 2016.

Actemra/RoActemra. For rheumatoid arthritis (RA), systemic juvenile idiopathic arthritis, polyarticular juvenile idiopathic arthritis and giant cell arteritis.

Actemra/RoActemra regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	756	647	+17	39.3	38.1
Europe	631	558	+12	32.8	32.9
Japan	304	284	+10	15.8	16.7
International	235	208	+12	12.1	12.3
Total sales	**1,926**	**1,697**	**+14**	**100**	**100**

Sales increased by 14%, with growth in all regions, driven by continued uptake of the subcutaneous formulation.

Xolair. For moderate to severe persistent allergic asthma (AA) and chronic idiopathic urticaria (CIU).

Xolair regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	1,742	1,498	+16	100	100
Total sales	**1,742**	**1,498**	**+16**	**100**	**100**

Sales grew by 16%, driven by market expansion outpacing competitive erosion in allergic asthma and continued growth in chronic idiopathic urticaria.

Ocrevus. For relapsing forms of multiple sclerosis (RMS) and primary progressive multiple sclerosis (PPMS).

Ocrevus regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	860	0	–	99.0	–
Europe	4	0	–	0.5	–
International	5	0	–	0.5	–
Total sales	**869**	**0**	**–**	**100**	**–**

Ocrevus was approved for sale by the US Food and Drug Administration (FDA) on 28 March 2017 and has shown a strong uptake since being launched. Ocrevus was approved in the European Union for RMS and PPMS in January 2018.

Lucentis. For wet age-related macular degeneration (wet AMD), macular oedema following retinal vein occlusion (RVO) and diabetic macular oedema (DME).

Lucentis regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	1,414	1,406	+1	100	100
Total sales	**1,414**	**1,406**	**+1**	**100**	**100**

Sales increased by 1% in the US, mainly driven by the launch of prefilled syringes and growth in the new indications of Diabetic Retinopathy (DR) and Myopic Choroidal Neovascularisation (mCNV).

Activase/TNKase. For acute ischaemic stroke (AIS) and acute myocardial infarction (AMI).

Activase/TNKase regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	1,168	1,062	+10	95.8	95.8
International	51	46	+8	4.2	4.2
Total sales	**1,219**	**1,108**	**+10**	**100**	**100**

Sales were 10% higher, led by the US, and mainly due to an increase in penetration and eligibility at the treatment centres.

Tarceva. For advanced non-small cell lung (NSCLC) and pancreatic cancer.

Tarceva regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	457	560	–18	54.2	54.7
Europe	140	174	–21	16.6	17.0
Japan	92	104	–9	10.9	10.2
International	154	186	–18	18.3	18.1
Total sales	**843**	**1,024**	**–18**	**100**	**100**

Sales were 18% lower, with declining sales mainly in the US, Europe and the International region due to increasing competitive pressure.

Pharmaceuticals Division – Sales by region

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
United States	20,496	18,594	+10	49.7	47.6
Europe	9,051	9,159	–2	22.0	23.4
Japan	3,713	3,711	+3	9.0	9.5
International	7,960	7,639	+4	19.3	19.5
– *EEMEA* [1]	*1,524*	*1,621*	*–4*	*3.7*	*4.1*
– *Latin America*	*2,121*	*1,868*	*+11*	*5.1*	*4.8*
– *Asia-Pacific*	*3,397*	*3,291*	*+3*	*8.2*	*8.4*
– *Other regions*	*918*	*859*	*+5*	*2.3*	*2.2*
Total sales	**41,220**	**39,103**	**+5**	**100**	**100**

1) Eastern Europe, Middle East and Africa.

United States. Sales grew by 10% led by the uptake following the launches of Ocrevus and Tecentriq. Xolair sales (+16%) and Activase/TNKase sales (+10%) both increased due to patient uptake. The HER2 franchise and MabThera/Rituxan also continued to grow (+9% and +6% respectively). Tamiflu sales declined mainly due to competition from generics, and sales of Avastin fell by 2% due to competition from immunotherapy medicines. Lucentis sales were broadly stable, while sales of Tarceva were lower due to competitive pressure. Mandatory discounts to hospitals under the 340B Drug Discount Program increased, although at a lower rate than in 2016. This was mainly due to higher utilisation of oncology products.

Europe. Sales decreased by 2%, mainly due to lower MabThera/Rituxan sales driven by competition from biosimilar versions which have been launched in several EU markets in 2017. The HER2 franchise continued to grow (+6%) and was driven by Perjeta sales, especially in the UK and Spain. Actemra/RoActemra sales increased due to growing demand for the subcutaneous formulation. Avastin sales decreased primarily as a result from a delisting for metastatic breast cancer in France. Tamiflu sales in Europe were 74% lower due to the base effect of a governmental order in the UK in 2016.

Japan. Sales grew by 3%. Alecensa sales increased by 41% due to further proceeded market penetration, Tamiflu by 25% and Actemra/RoActemra by 10% and the osteoporosis medicine Edirol grew by 11%. This was partially offset by lower sales of various established products.

International. Sales increased by 4% driven by Latin America and Asia-Pacific. Sales in China mainly grew due to additional reimbursement as well as broader market penetration for Avastin. Sales in Brazil increased, led by Herceptin, which saw higher demand. In Russia, sales declined as a result from the competition by non-comparable biologics for Herceptin.

Pharmaceuticals Division – Sales for E7 leading emerging markets

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
Brazil	958	741	+18	2.3	1.9
China	1,799	1,721	+6	4.3	4.4
India	63	81	–24	0.2	0.2
Mexico	280	272	+5	0.7	0.7
Russia	98	149	–41	0.2	0.4
South Korea	319	325	–4	0.8	0.8
Turkey	286	297	+16	0.7	0.8
Total sales	**3,803**	**3,586**	**+6**	**9.2**	**9.2**

Competition from generic medicines and biosimilars

The Group's pharmaceutical products are generally protected by patent rights which are intended to provide the Group with exclusive marketing rights in various countries. However, patent rights are of varying scope and duration, and the Group may be required to enter into costly litigation to enforce its patent and other intellectual property rights. Loss of market exclusivity for one or more major products – either due to patent expiration, challenges from generic medicines, biosimilars and non-comparable biologics or other reasons – could have a material adverse effect on the Group's business, results of operations or financial condition. The introduction of a generic, biosimilar or non-comparable biologic version of the same or a similar medicine typically results in a significant reduction in net sales for the relevant product, as other manufacturers typically offer their versions at lower prices.

Patents and their expiry are, and always have been, an integral part of the Group's business model and future growth will remain driven by innovation. The latest information from clinical studies is included in the Annual Report on pages 40 to 53 and details of the Group's Product Development Portfolio are available for download at:
http://www.roche.com/research_and_development/who_we_are_how_we_work/pipeline.htm

2017 product sales affected by recent patent expiry

	2017 (CHF m)	2016 (CHF m)	% change (CER)	Comment
Tamiflu	535	794	–33	Patent expiry in US and other major markets in 2016
Pegasys	178	259	–32	US patent expiry in 2018, other major markets from 2017
Valcyte/Cymevene	235	306	–23	US patent expiry in 2015, other major markets from 2017

The intellectual property for biologics can involve multiple patents and patent timelines for each individual product and therefore it is more difficult to give an exact date for patent expiry for biologic medicines. The Group currently estimates that some basic, primary patents for its major biologic medicines will begin to expire as follows:

- MabThera/Rituxan: from around mid-2018 in the US.
- Herceptin: from mid-2019 in the US.
- Avastin: from mid-2019 in the US and from around 2020 in the EU.
- Subcutaneous formulations of MabThera/Rituxan and Herceptin: beyond 2025 (secondary patent rights).

The 'composition of matter' patents for MabThera/Rituxan and Herceptin in the EU have expired. The first biosimilar versions of MabThera/Rituxan were launched in several EU markets from mid-2017 and these were the major driver in the sales decline in Europe in 2017.

2017 product sales affected by biosimilar launches

	2017 (CHF m)	2016 (CHF m)	% change (CER)	Comment
MabThera/Rituxan – Europe	1,690	1,879	–11	First biosimilar launches from mid-2017

Based on publicly available information from competitor companies, the Group currently anticipates the following potential developments in 2018:

- In the US, there are still many uncertainties surrounding when specific biosimilar versions of the Group's biologic medicines will be approved by the Food and Drug Administration. The first biosimilar versions of MabThera/Rituxan could come to market in the US around mid- to end-2018.
- In Europe, the first biosimilar versions of Herceptin could come to market during the first half of 2018.
- In Japan, the first biosimilar version of MabThera/Rituxan was approved and listed in late 2017. The first biosimilar versions of Herceptin could also come to market in Japan during 2018.

Sales in 2017 for MabThera/Rituxan, Herceptin and Avastin are disclosed above in the previous sections, including regional breakdowns.

Operating results

Pharmaceuticals Division – Royalties and other operating income

	2017 (CHF m)	2016 (CHF m)	% change (CER)
Royalty income	1,551	1,521	+2
Income from out-licensing agreements	122	98	+24
Income from disposal of products and other	611	325	+89
Total – IFRS and Core basis	**2,284**	**1,944**	**+18**

The increase of 18% at CER was mainly due to higher income from product disposals, which in 2017 included the sale of the worldwide rights for Bonviva and Bondronat (both excluding US and Japan), Dilatrend and Kytril (excluding Japan). Royalty income increased by 2% mainly due to a net increase in sales across the royalty portfolio, partly offset by the expiration of the royalty bearing Eylea patents. Income from out-licensing agreements increased by 24% due to the out-licensing of lebrikizumab rights.

Pharmaceuticals Division – Cost of sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)
Manufacturing cost of goods sold and period costs	(5,562)	(5,211)	+5
Royalty expenses	(852)	(811)	+5
Collaboration and profit-sharing agreements	(2,271)	(2,126)	+7
Impairment of property, plant and equipment	(22)	(27)	–15
Cost of sales – Core basis	**(8,707)**	**(8,175)**	**+6**
Global restructuring plans	(377)	(737)	–49
Amortisation of intangible assets	(1,230)	(1,314)	–6
Impairment of intangible assets	(1,664)	0	–
Business combinations – inventory fair value adjustment	0	(167)	–
Total – IFRS basis	**(11,978)**	**(10,393)**	**+15**

Core costs increased by 6% at CER and, as a percentage of sales, cost of sales increased by 0.2 percentage points to 21.1%. Manufacturing cost of sales grew by 5%, in line with the sales growth. Increased costs from new manufacturing facilities being brought online in recent years were partly offset by lower inventory write-offs. Royalty expenses were 5% higher due to Ocrevus sales in 2017. Non-core costs include the amortisation of intangible assets, mainly related to the Esbriet product intangibles acquired in the InterMune acquisition of 2014. The 2017 results additionally include CHF 1,664 million of impairment of these Esbriet intangibles, due to the lower-than-expected sales of Esbriet in 2017 and a reduction in sales expectations in the latest long-term forecasts. The 2016 results included the final fair value unwind adjustment of CHF 167 million for the acquired Esbriet inventories.

Pharmaceuticals Division – Marketing and distribution

	2017 (CHF m)	2016 (CHF m)	% change (CER)
Marketing and distribution – Core basis	**(6,720)**	**(6,362)**	**+6**
Global restructuring plans	(234)	(26)	Over +500
Amortisation of intangible assets	(6)	(3)	+88
Total – IFRS basis	**(6,960)**	**(6,391)**	**+9**

Core costs increased by 6% at CER, and as a percentage of sales, they remained stable at 16.3%. Costs were incurred to ensure increased patient access and for the launches of Ocrevus, Tecentriq, Hemlibra and other products. Restructuring costs relate to resourcing flexibility initiatives in sales affiliates.

Pharmaceuticals Division – Research and development

	2017 (CHF m)	2016 (CHF m)	% change (CER)
Research and development – Core basis	**(9,036)**	**(8,588)**	**+6**
Global restructuring plans	(21)	(90)	–78
Amortisation of intangible assets	(123)	(135)	–8
Impairment of intangible assets	(524)	(1,343)	–61
Total – IFRS basis	**(9,704)**	**(10,156)**	**–4**

Core costs increased by 6% at CER and, as a percentage of sales, decreased by 0.1 percentage points to 21.9%. The oncology franchise remained the primary area of research and development, with Tecentriq and the cancer immunotherapy portfolio being key drivers. Neuroscience and immunology were also significant areas of spending, in both early-stage research and late-stage development. In addition, the Pharmaceuticals Division in-licensed pipeline compounds and technologies with a total value of CHF 736 million (2016: CHF 1,033 million), which are capitalised as intangible assets. The impairment charges of CHF 524 million include an impairment of CHF 195 million for a compound acquired as part of the Trophos acquisition arising from the launch of a competitor product and an impairment of CHF 149 million due to the decision to stop development of one compound with an alliance partner following assessment of clinical and non-clinical data. Impairments totalling CHF 121 million were recorded following the write-off of intangible assets acquired in the Dutalys and Santaris acquisitions.

Pharmaceuticals Division – General and administration

	2017 (CHF m)	2016 (CHF m)	% change (CER)
Administration	(1,234)	(1,142)	+8
Pensions – past service costs	31	311	–90
Gains (losses) on disposal of property, plant and equipment	17	(2)	–
Business taxes and capital taxes	(293)	(281)	+5
Other general items	39	101	–65
General and administration – Core basis	**(1,440)**	**(1,013)**	**+43**
Global restructuring plans	(245)	(82)	+196
Impairment of goodwill and intangible assets	(384)	(95)	+307
Alliances and business combinations	324	376	–14
Legal and environmental cases	143	(18)	–
Pensions – settlement gains (losses)	(18)	10	–
Total – IFRS basis	**(1,620)**	**(822)**	**+98**

Core costs increased by 43% at CER and, as a percentage of sales, increased to 3.5% from 2.6% due to income from pension changes in 2016 of CHF 310 million. Excluding this, core costs increased by 10% mainly due to higher legal service costs. There were also higher personnel costs across the division. Impairments consist of the write-off of CHF 384 million of goodwill due to the decision to stop development of the back-up compound acquired as part of the Seragon acquisition. The alliance and business combination income includes the reversal of the contingent consideration provisions for the Seragon, Trophos and Dutalys acquisitions. Global restructuring costs primarily relate to the divestment of the Florence, Segrate and Leganés sites.

Roche Pharmaceuticals and Chugai subdivisional operating results

Pharmaceuticals subdivisional operating results in millions of CHF

	Roche Pharmaceuticals 2017	Roche Pharmaceuticals 2016	Chugai 2017	Chugai 2016	Pharmaceuticals Division 2017	Pharmaceuticals Division 2016
Sales						
– External customers	37,507	35,392	3,713	3,711	41,220	39,103
– Within division	1,222	1,363	670	568	1,892	1,931
Core operating profit	16,729	16,065	881	717	17,601	16,909
– margin, % of sales to external customers	44.6	45.4	23.7	19.3	42.7	43.2
Operating profit	12,395	12,476	856	682	13,242	13,265
– margin, % of sales to external customers	33.0	35.3	23.1	18.4	32.1	34.0
Operating free cash flow	16,056	13,592	761	267	16,817	13,859
– margin, % of sales	42.8	38.4	20.5	7.2	40.8	35.4

Pharmaceuticals Division total core operating profit and operating profit both include the elimination of CHF minus 9 million of unrealised intercompany gains between Roche Pharmaceuticals and Chugai (2016: CHF plus 127 million).

The decrease in the exchange rate of the Japanese yen has a negative impact of 4% on the Chugai results when expressed in Swiss francs. Sales by Chugai to third parties increased by 3% in Japanese yen, while sales within the division increased by 22% in Japanese yen. Chugai core operating profit increased by 27% due to higher sales and milestone income. This was partially offset by increased research and development costs and higher general and administration costs. Operating free cash flow at Chugai increased by CHF 494 million due to a decrease of inventories and higher operating profit.

Financial position

Pharmaceuticals Division – Net operating assets

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)	Movement: Transactions (CHF m)	Movement: CTA (CHF m)
Trade receivables	6,569	5,851	+12	+13	748	(30)
Inventories	5,126	5,634	–9	–8	(476)	(32)
Trade payables	(1,765)	(1,645)	+7	+8	(132)	12
Net trade working capital	**9,930**	**9,840**	**+1**	**+2**	**140**	**(50)**
Other receivables/(payables)	(6,510)	(5,258)	+24	+24	(1,261)	9
Net working capital	**3,420**	**4,582**	**–25**	**–24**	**(1,121)**	**(41)**
Property, plant and equipment	14,358	13,944	+3	+4	551	(137)
Goodwill and intangible assets	11,196	14,869	–25	–22	(3,194)	(479)
Provisions	(2,449)	(2,751)	–11	–11	304	(2)
Other long-term assets, net	434	112	+288	+301	327	(5)
Long-term net operating assets	**23,539**	**26,174**	**–10**	**–8**	**(2,012)**	**(623)**
Net operating assets	**26,959**	**30,756**	**–12**	**–10**	**(3,133)**	**(664)**

The absolute amount of the movement between the 2017 and 2016 consolidated balances reported in Swiss francs is split between actual 2017 transactions (translated at average rates for 2016) and the currency translation adjustment (CTA) that arises on consolidation. The 2017 transactions include non-cash movements and therefore the movements in this table are not the same as the amounts shown in the operating free cash flow (which only includes the cash movements). A full consolidated balance sheet is given on page 43 of the Annual Financial Statements, and a reconciliation between that balance sheet and the information given above is on page 147.

Currency translation effects on balance sheet amounts. Compared to the start of the year the Swiss franc appreciated against the US dollar, resulting in a negative translation impact on net operating assets. This is partially offset by the positive translation impact from the euro against which the Swiss franc depreciated. The exchange rates used are given on page 28.

Net working capital. Net working capital decreased by 24%, due to lower inventories and a higher net liability for other receivables/payables. Inventories decreased due to inventory write-offs and lower inventory levels for certain mature products, partly offset by higher inventories for launch products. The net liability for other receivables/payables increased due to higher accruals for sales rebates and chargebacks and for payroll. Other accrued liabilities in 2017 also included CHF 261 million for the Genentech property purchase option exercise obligation, which is due in July 2018. Partially offsetting these effects, trade receivables increased due to higher sales and also due to extended payment terms for Ocrevus in the US.

Long-term net operating assets. Overall long-term net operating assets decreased by 8%. Goodwill and intangible assets decreased due to the significant impairments recorded in 2017. Capital expenditure included manufacturing investments in the US and Germany and by Chugai in Japan, and also site development at the Basel and Kaiseraugst sites in Switzerland and at the South San Francisco campus. Provisions decreased following the reversal of contingent consideration and legal provisions and the utilisation of restructuring provisions. Other long-term net assets increased due to the reclassification from long-term to short-term of the CHF 261 million of liabilities for the Genentech property purchase option exercise obligation due in July 2018.

Free cash flow

Pharmaceuticals Division – Operating free cash flow

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)
Operating profit	**13,242**	**13,285**	**0**	**0**
– Depreciation, amortisation and impairment	5,280	4,358	+21	+21
– Provisions	(303)	(589)	–49	–48
– Equity compensation plans	388	371	+5	+5
– Other	625	519	+20	+22
Operating profit cash adjustments	**5,990**	**4,659**	**+29**	**+29**
Operating profit, net of operating cash adjustments	**19,232**	**17,944**	**+7**	**+7**
(Increase) decrease in net working capital	297	(586)	–	–
Investments in property, plant and equipment	(2,061)	(2,510)	–18	–18
Investments in intangible assets	(651)	(989)	–34	–34
Operating free cash flow	**16,817**	**13,859**	**+21**	**+21**
– as % of sales	40.8	35.4	+5.4	+5.4

See pages 144–146 for the definition of free cash flow and a detailed breakdown.

The Pharmaceuticals Division's operating free cash flow increased by 21% to CHF 16.8 billion. The main contribution came from operating profit, net of operating cash adjustments, with an increase of 7% at CER. This was higher than the increase in core operating profit of 4% due to the base effect of the income from pension changes in 2016. Net working capital absorbed less cash than at the start of the year, mainly due to higher payables, partially offset by higher receivables. Most of the reduction in balance sheet inventories during 2017 came from non-cash effective write-downs. However, the build-up of inventories that occurred in 2016 was not repeated and this contributed to the year-on-year growth in operating free cash flow. Capital expenditure was CHF 2.1 billion, with the major items as described above in the 'Financial position' section. Capital expenditure and investments in intangible assets were lower than in 2016, which contributed to the year-on-year growth in operating free cash flow.

Diagnostics Division operating results

Diagnostics Division operating results

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)
IFRS results				
Sales	12,079	11,473	+5	+5
Royalties and other operating income	163	116	+41	+40
Cost of sales	(6,201)	(5,787)	+7	+7
Marketing and distribution	(2,887)	(2,749)	+5	+5
Research and development	(1,588)	(1,376)	+15	+15
General and administration	(1,262)	(464)	+172	+172
Operating profit	**304**	**1,213**	**–75**	**–74**
– margin, % of sales	2.5	10.6	–8.1	–8.0
Core results[1]				
Sales	12,079	11,473	+5	+5
Royalties and other operating income	163	116	+41	+40
Cost of sales	(5,659)	(5,294)	+7	+7
Marketing and distribution	(2,792)	(2,645)	+6	+5
Research and development	(1,356)	(1,327)	+2	+2
General and administration	(526)	(402)	+31	+31
Core operating profit	**1,909**	**1,921**	**–1**	**0**
– margin, % of sales	15.8	16.7	–0.9	–0.8
Financial position				
Net working capital	2,594	2,796	–7	–10
Long-term net operating assets	12,849	13,392	–4	–4
Net operating assets	**15,443**	**16,188**	**–5**	**–5**
Free cash flow[2]				
Operating free cash flow	1,553	720	+116	+111
– margin, % of sales	12.9	6.3	+6.6	+6.3

1) See pages 141–144 for the definition of core results.
2) See pages 144–146 for the definition of free cash flow.

Sales

The Diagnostics Division continued to increase sales with growth of 5% at CER to CHF 12.1 billion. Centralised and Point of Care Solutions, with 7% sales growth, was the main contributor, led by its immunodiagnostics business. Molecular Diagnostics sales increased by 4%, mainly driven by biochemical reagents, molecular diagnostics instruments and the human papillomavirus (HPV) screening. Diabetes Care sales decreased by 4% due to continued challenging market conditions in the US. The growth in Tissue Diagnostics was driven by the advanced staining product portfolio.

Diagnostics Division – Sales by business area

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
Centralised and Point of Care Solutions	7,179	6,698	+7	59.4	58.3
Diabetes Care	1,965	2,016	–4	16.3	17.6
Molecular Diagnostics	1,920	1,845	+4	15.9	16.1
Tissue Diagnostics	1,015	914	+11	8.4	8.0
Total sales	**12,079**	**11,473**	**+5**	**100**	**100**

Centralised and Point of Care Solutions. With an increase in sales of 7%, this business area was the major contributor to the divisional sales performance. Growth was primarily driven by the immunodiagnostics business (+13%), which represented 32% of divisional sales. Sales growth was also supported by the clinical chemistry business (+3%). Regionally, sales grew in Asia-Pacific (+17%) due to growth in China. The 3% sales growth reported in the Europe, Middle East and Africa ('EMEA') region was mainly due to the immunodiagnostics business (+7%).

Centralised and Point of Care Solutions regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
Europe, Middle East and Africa (EMEA)	2,577	2,488	+3	35.9	37.1
North America	1,465	1,444	+1	20.4	21.6
Rest of the World	3,137	2,766	+14	43.7	41.3
Total sales	**7,179**	**6,698**	**+7**	**100**	**100**

Diabetes Care. Sales decreased by 4% due to the continuation of challenging market conditions in the US, leading to a decline in North America sales of 23%. The decrease of 3% in EMEA was due to competitive pressure and increasing reimbursement of competitor systems for continuous glucose monitoring, notably in Germany. Sales growth in the Rest of the World was driven by new business in Latin America (Argentina and Brazil) and Asia-Pacific (China and India).

Diabetes Care regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
Europe, Middle East and Africa (EMEA)	1,236	1,258	–3	62.9	62.4
North America	221	285	–23	11.2	14.1
Rest of the World	508	473	+6	25.9	23.5
Total sales	**1,965**	**2,016**	**–4**	**100**	**100**

Molecular Diagnostics. Overall sales rose by 4% with growth in the underlying molecular business also being 4% and sales in the sequencing business reporting a decrease, mainly in the US market. The growth in the molecular business sales came mainly from biochemical reagents, molecular diagnostics instruments and the human papillomavirus (HPV) screening. Regional growth was led by Asia-Pacific (+10%), notably China, and EMEA (+4%).

Molecular Diagnostics regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
Europe, Middle East and Africa (EMEA)	708	668	+4	36.9	36.2
North America	726	725	0	37.8	39.3
Rest of the World	486	452	+8	25.3	24.5
Total sales	**1,920**	**1,845**	**+4**	**100**	**100**

Tissue Diagnostics. Sales rose by 11%, driven by 11% growth in the advanced staining portfolio, 13% growth in companion diagnostics and 12% growth in the primary staining business. Regionally, sales in Asia-Pacific grew by 20%, with China as the main growth factor.

Tissue Diagnostics regional sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
Europe, Middle East and Africa (EMEA)	252	223	+13	24.8	24.4
North America	599	553	+8	59.0	60.5
Rest of the World	164	138	+20	16.2	15.1
Total sales	**1,015**	**914**	**+11**	**100**	**100**

Diagnostics Division – Sales by region

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
Europe, Middle East and Africa (EMEA)	4,773	4,637	+2	39.5	40.4
North America	3,011	3,007	0	24.9	26.2
Asia-Pacific	2,939	2,559	+15	24.4	22.3
Latin America	884	792	+10	7.3	6.9
Japan	472	478	+2	3.9	4.2
Total sales	**12,079**	**11,473**	**+5**	**100**	**100**

In the EMEA region, the division's largest market, the main driver of the sales increase was Centralised and Point of Care Solutions. In North America sales were stable; the sales growth in Tissue Diagnostics (+8%) and Centralised and Point of Care Solutions (+1%) were fully offset by lower sales in the Diabetes Care business, which fell by 23% due to continued price pressure. The sales increase in Asia-Pacific was mainly in China, which grew by 21%. In Latin America sales rose by 10% due to new tender business and local inflationary price increases. Sales growth in Japan was led by the Centralised and Point of Care Solutions business.

Diagnostics Division – Sales for E7 leading emerging markets

	2017 (CHF m)	2016 (CHF m)	% change (CER)	% of sales (2017)	% of sales (2016)
Brazil	283	234	+11	2.3	2.0
China	1,882	1,586	+21	15.7	13.9
India	163	139	+13	1.3	1.2
Mexico	124	122	+2	1.0	1.1
Russia	147	118	+9	1.2	1.0
South Korea	203	188	+5	1.7	1.6
Turkey	131	130	+21	1.1	1.1
Total sales	**2,933**	**2,517**	**+17**	**24.3**	**21.9**

Operating results

Diagnostics Division – Royalties and other operating income

	2017 (CHF m)	2016 (CHF m)	% change (CER)
Royalty income	111	98	+12
Income from out-licensing agreements	27	3	Over +500
Income from disposal of products and other	25	15	+60
Total – IFRS and Core basis	**163**	**116**	**+40**

The increase of 40% at CER was due to increased royalty income mainly from patent disputes combined with additional income from new licence agreements.

Diagnostics Division – Cost of sales

	2017 (CHF m)	2016 (CHF m)	% change (CER)
Manufacturing cost of goods sold and period costs	(5,494)	(5,127)	+7
Royalty expenses	(165)	(167)	–1
Cost of sales – Core basis	**(5,659)**	**(5,294)**	**+7**
Global restructuring plans	(107)	(100)	+5
Amortisation of intangible assets	(315)	(323)	–3
Impairment of intangible assets	(120)	(70)	+72
Total – IFRS basis	**(6,201)**	**(5,787)**	**+7**

Core costs increased by 7% at CER. This was driven in part by an unfavourable product mix from higher instrument placements, notably in the Asia-Pacific region. The remainder of the increase arose from higher depreciation of placed instruments. The core cost of sales ratio increased to 46.8% from 46.1%. Impairment charges relate to the partial impairment of sequencing business intangible assets acquired as part of the Ariosa acquisition. Global restructuring costs were mainly related to site closures and costs for the initiative to harmonise processes and systems.

Diagnostics Division – Marketing and distribution

	2017 (CHF m)	2016 (CHF m)	% change (CER)
Marketing and distribution – Core basis	**(2,792)**	**(2,645)**	**+5**
Global restructuring plans	(92)	(102)	–9
Amortisation of intangible assets	(3)	(2)	+87
Total – IFRS basis	**(2,887)**	**(2,749)**	**+5**

Core costs increased by 5% at CER, primarily due to increased spending in emerging markets in the Asia-Pacific region, especially in China, and in the EMEA region. On a core basis, marketing and distribution costs as a percentage of sales were stable at 23.1%. Global restructuring costs were mainly due to organisational changes from divisional strategy plans.

Diagnostics Division – Research and development

	2017 (CHF m)	2016 (CHF m)	% change (CER)
Research and development – Core basis	**(1,356)**	**(1,327)**	**+2**
Global restructuring plans	(66)	(43)	+51
Amortisation of intangible assets	(14)	(6)	+117
Impairment of intangible assets	(152)	0	–
Total – IFRS basis	**(1,588)**	**(1,376)**	**+15**

Core costs increased by 2% at CER. There was increased spending in integrated core laboratory and digitalised data management projects. This was partially offset by decreased spending in Diabetes Care and Molecular Diagnostics for blood screening and HPV. As a percentage of sales, research and development core costs decreased to 11.2% from 11.6% in 2016. Impairment charges relate to the partial impairment of Molecular Diagnostics intangible assets acquired as part of the GeneWeave acquisition.

Diagnostics Division – General and administration

	2017 (CHF m)	2016 (CHF m)	% change (CER)
Administration	(532)	(494)	+7
Pensions – past service costs	6	77	–92
Gains (losses) on disposal of property, plant and equipment	(2)	1	–
Business taxes and capital taxes	(1)	(18)	–92
Other general items	3	32	–97
General and administration – Core basis	**(526)**	**(402)**	**+31**
Global restructuring plans	(27)	(66)	–60
Impairment of goodwill and intangible assets	(674)	0	–
Alliances and business combinations	27	26	+4
Legal and environmental cases	(58)	(28)	+105
Pensions – settlement gains (losses)	(4)	6	–
Total – IFRS basis	**(1,262)**	**(464)**	**+172**

Core costs increased by 31% at CER compared to 2016 due to the base effect of income from changes in the Group's Swiss pension plans in 2016. Excluding this effect, core general and administration costs increased by 10%. Administration costs increased by 7%. This was due to IT costs, additional headcount, notably in China, and the creation of new legal entities in the Diabetes Care business. Business taxes included income from a settlement agreement for the Medical Devices Excise Tax in the US. Other general items in 2016 included income from underspending in IT and infrastructure areas. As a percentage of sales, core costs increased to 4.4% from 3.5% in 2016. The impairment relates to goodwill for the sequencing business. Legal expenses mainly arose from increasing litigation costs in the sequencing business.

Financial position

Diagnostics Division – Net operating assets

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)	Movement: Transactions (CHF m)	Movement: CTA (CHF m)
Trade receivables	3,137	3,023	+4	+3	94	20
Inventories	2,280	2,294	–1	–5	(109)	95
Trade payables	(1,007)	(1,024)	–2	–4	43	(26)
Net trade working capital	**4,410**	**4,293**	**+3**	**+1**	**28**	**89**
Other receivables/(payables)	(1,816)	(1,497)	+21	+20	(300)	(19)
Net working capital	**2,594**	**2,796**	**–7**	**–10**	**(272)**	**70**
Property, plant and equipment	6,431	5,873	+10	+6	346	212
Goodwill and intangible assets	7,249	8,459	–14	–13	(1,051)	(159)
Provisions	(842)	(950)	–11	–11	104	4
Other long-term assets, net	11	10	+10	+54	5	(4)
Long-term net operating assets	**12,849**	**13,392**	**–4**	**–4**	**(596)**	**53**
Net operating assets	**15,443**	**16,188**	**–5**	**–5**	**(868)**	**123**

The absolute amount of the movement between the 2017 and 2016 consolidated balances reported in Swiss francs is split between actual 2017 transactions (translated at average rates for 2016) and the currency translation adjustment (CTA) that arises on consolidation. The 2017 transactions include non-cash movements and therefore the movements in this table are not the same as the amounts shown in the operating free cash flow (which only include the cash movements). A full consolidated balance sheet is given on page 43 of the Annual Financial Statements, and a reconciliation between that balance sheet and the information given above is on page 147.

Currency translation effects on balance sheet amounts. Compared to the start of the year the Swiss franc depreciated significantly against the euro, resulting in a positive translation impact on net operating assets. This was mostly offset by the appreciation of the Swiss franc against the US dollar. The exchange rates used are given on page 28.

Net working capital. Net trade working capital increased by 1% at CER. Trade receivables increased by 3% driven by sales increase. Inventories decreased by 5% due to inventories optimisation initiatives and high demand. Trade payables decreased by 4% due to lower spending. The net liability for other receivables/payables increased due to higher liabilities for sales rebates.

Long-term net operating assets. Long-term net operating assets decreased by 4% at CER due to lower goodwill and intangible assets, partially offset by higher property, plant and equipment and lower provisions. The 13% decrease in goodwill and intangible assets was due to the impairments in the sequencing business and in Molecular Diagnostics. Property, plant and equipment increased by 6% due to higher instrument placements and manufacturing site expansion in China and Germany. Provisions decreased by 11% following the payment of milestones related to recent acquisitions.

Free cash flow

Diagnostics Division – Operating free cash flow

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)
Operating profit	**304**	**1,213**	**–75**	**–74**
– Depreciation, amortisation and impairment	2,339	1,374	+70	+70
– Provisions	12	38	–68	–70
– Equity compensation plans	73	69	+6	+6
– Other	204	95	+115	+115
Operating profit cash adjustments	**2,628**	**1,576**	**+67**	**+66**
Operating profit, net of operating cash adjustments	**2,932**	**2,789**	**+5**	**+5**
(Increase) decrease in net working capital	118	(430)	–	–
Investments in property, plant and equipment	(1,444)	(1,627)	–11	–12
Investments in intangible assets	(53)	(12)	+342	+357
Operating free cash flow	**1,553**	**720**	**+116**	**+111**
– as % of sales	12.9	6.3	+6.6	+6.3

For the definition of free cash flow and a detailed breakdown see pages 144–146.

The operating free cash flow of the Diagnostics Division was a net cash inflow of CHF 1,553 million compared to CHF 720 million in 2016. The cash generation of the business, measured by the operating profit, net of operating cash adjustments, increased by 5%, in line with the sales growth of 5%. The build-up in net working capital in 2016, notably in inventories, was not repeated and this contributed to the year-on-year growth in operating free cash flow. Capital expenditure was CHF 1.4 billion, with the major items as described above in the 'Financial position' section. Capital expenditure was lower than in 2016, which included significant site expansions.

Corporate operating results

Corporate operating results summary

	2017 (CHF m)	2016 (CHF m)	% change (CER)
Administration	(454)	(422)	+8
Pensions – past service costs	–	39	–
Business taxes and capital taxes	(17)	(17)	–4
Other general items	(27)	(10)	+179
General and administration costs – Core basis[1]	**(498)**	**(410)**	**+22**
Global restructuring plans	(39)	13	–
Alliances and business combinations	(1)	(1)	–15
Legal and environmental cases	(5)	(31)	–82
Total costs – IFRS basis	**(543)**	**(429)**	**+27**
Financial position			
Net working capital	(119)	(104)	+15
Long-term net operating assets	(178)	(213)	–21
Net operating assets	**(297)**	**(317)**	**–9**
Free cash flow[2]			
Operating free cash flow	(543)	(493)	+10

1) See pages 141–144 for the definition of core results.
2) See pages 144–146 for the definition of free cash flow and a detailed breakdown.

General and administration costs increased by 22% at CER on a core basis, driven by the base effect of income from pension changes in 2016. Excluding this, core costs were higher by 11% due to impairment of corporate assets, increased personnel related costs and corporate project activities. Total costs on IFRS basis increased by 27% and included restructuring expenses in 2017 which offset legal and environmental costs in 2016.

The change in net operating assets was due to the utilisation of provisions for ongoing environmental remediation activities at Nutley in the US and at Grenzach in Germany and also due to the impairment of assets. Corporate operating free cash flow showed a higher outflow, which was broadly in line with the growth of core costs excluding the impact of the pension plans changes.

Foreign exchange impact on operating results

The Group's exposure to movements in foreign currencies affecting its operating results, as expressed in Swiss francs, is summarised by the following key figures and comments.

Growth (reported at CER and in CHF)

	% change (CER) 2017	2016	% change (CHF) 2017	2016
Pharmaceuticals Division				
Sales	+5	+3	+5	+5
Core operating profit	+4	+4	+4	+5
Diagnostics Division				
Sales	+5	+7	+5	+6
Core operating profit	0	+1	−1	−1
Group				
Sales	+5	+4	+5	+5
Core operating profit	+3	+4	+3	+5

Exchange rates against the Swiss franc

	31 December 2017	Average 2017	31 December 2016	Average 2016
1 USD	0.98	0.98	1.02	0.99
1 EUR	1.17	1.11	1.07	1.09
100 JPY	0.87	0.88	0.88	0.91

In 2017 compared to 2016, the Swiss franc was weaker against the euro and other European currencies and against several major currencies in the Asia-Pacific region. This was partially offset by the Swiss franc being stronger against the Japanese yen. The Swiss franc remained stable against the US dollar. The net impact is negligible on the results expressed in Swiss francs compared to constant exchange rates for sales, core operating profit and Core EPS.

The sensitivity of Group sales and core operating profit to a 1% change in average foreign currency exchange rates against the Swiss franc during 2017 is shown in the table below.

Currency sensitivities

Impact of 1% increase in average exchange rate versus the Swiss franc	Sales (CHF m)	Core operating profit (CHF m)
US dollar	+241	+101
Euro	+96	+43
Japanese yen	+42	+25
All other currencies	+137	+73

The Group's revenues are primarily generated from sales of products to customers. Such revenues are mainly received in the local currency of the customer's home market, although in certain emerging markets invoicing is made in major international currencies such as the US dollar and euro. The costs of sales and marketing and also some administration costs follow the same currency pattern as sales. The majority of research and development activities are incurred at the Group's global research facilities, and therefore the costs are mainly concentrated in US dollars, Swiss francs and euros. General and administration costs tend to be incurred mainly at central locations in the US, Switzerland and Germany. Chugai's revenues and costs are denominated in Japanese yen.

Treasury and taxation results

Treasury and taxation results

	2017 (CHF m)	2016 (CHF m)	% change (CHF)	% change (CER)
IFRS results				
Operating profit	13,003	14,069	–8	–8
Financing costs	(839)	(1,099)	–24	–24
Other financial income (expense)	84	37	+127	+130
Profit before taxes	**12,248**	**13,007**	**–6**	**–6**
Income taxes	(3,423)	(3,274)	+5	+5
Net income	**8,825**	**9,733**	**–9**	**–9**
Attributable to				
– Roche shareholders	8,633	9,576	–10	–10
– Non-controlling interests	192	157	+22	+28
Core results [1]				
Operating profit	19,012	18,420	+3	+3
Financing costs	(819)	(1,034)	–21	–21
Other financial income (expense)	75	37	+103	+105
Profit before taxes	**18,268**	**17,423**	**+5**	**+5**
Income taxes	(4,864)	(4,735)	+3	+3
Net income	**13,404**	**12,688**	**+6**	**+6**
Attributable to				
– Roche shareholders	13,192	12,507	+5	+5
– Non-controlling interests	212	181	+17	+22
Financial position				
Net debt	(6,963)	(13,248)	–47	–45
Pensions	(6,620)	(6,940)	–5	–9
Income taxes	21	(390)	–	–
Financial non-current assets	557	536	+4	+4
Derivatives, net	(22)	(262)	–92	–92
Collateral, net	39	302	–87	–87
Interest payable	(218)	(289)	–25	–23
Other non-operating assets, net	108	66	+64	+69
Total net assets (liabilities)	**(13,098)**	**(20,225)**	**–35**	**–34**
Free cash flow [2]				
Treasury activities	(498)	(1,218)	–59	–59
Taxes paid	(3,909)	(3,738)	+5	+5
Total	**(4,407)**	**(4,956)**	**–11**	**–11**

1) See pages 141–144 for the definition of core results.
2) See pages 144–146 for the definition of free cash flow.

Financing costs

Core financing costs were CHF 819 million, a decrease of 21% at CER compared to 2016. Interest expenses (including amortisation of debt discount and issue costs) decreased by 15% to CHF 598 million from CHF 707 million in 2016 due to the continued repayment and refinancing of debt at lower interest rates. Losses on bond redemptions in 2017 were CHF 74 million compared to CHF 142 million in 2016. The net interest cost of defined benefit pension plans decreased by 22% at CER to CHF 147 million mainly due to lower discount rates in Germany at the end of 2016. A full analysis of financing costs is given in Note 3 to the Annual Financial Statements and details of the debt repayments and redemptions are given in Note 20.

Other financial income (expense)

Core other financial income (expense) was a net income of CHF 75 million compared to a net income of CHF 37 million in 2016 due to lower foreign exchange losses and higher net income from equity securities. The net foreign exchange results reflect hedging costs and losses on unhedged positions and were a net loss of CHF 115 million compared to a net loss of CHF 124 million in 2016. Core net income from equity securities was CHF 162 million in 2017 compared to CHF 154 million in 2016. A full analysis of other financial income (expense) is given in Note 3 to the Annual Financial Statements.

Income taxes

The Group's effective core tax rate decreased by 0.6 percentage points to 26.6% in 2017. This was largely due to mix effects within the manufacturing supply chain.

The IFRS results show an increase in the effective tax rate of 2.7 percentage points mainly due to the transitional effect of changes in US tax rates, as described below, and the non-core results including significant goodwill impairments that are not tax deductible. The IFRS results also include non-core income from the releases of contingent consideration provisions that is not taxable, hence the net tax effect in the 'Alliances and business combinations' line in the table below.

Changes to US tax rates were enacted on 22 December 2017 that will become effective from 1 January 2018. Among the changes is a decrease in the US Federal tax rate from 35% to 21%. The Group has carried out a remeasurement of its deferred tax positions and as a consequence the net deferred tax asset recorded on the balance sheet was reduced by CHF 346 million as of the end of 2017. This resulted in a transitional expense of CHF 116 million in 2017 which has been treated as a non-core item. The remaining adjustments of CHF 230 million were recorded to other comprehensive income, in so far as they relate to temporary differences arising on items that were themselves recorded to other comprehensive income, such as actuarial gains/losses on US pension plans. Had these new rates applied for the whole of 2017, and excluding any transition impacts, the Group's 2017 effective core tax rate in percentage terms, would have been in the low twenties.

Further details of the Group's income tax expenses and related balance sheet positions are given in Note 4 to the Annual Financial Statements.

Analysis of the Group's effective tax rate

			2017			2016
	Profit before tax (CHF m)	Income taxes (CHF m)	Tax rate (%)	Profit before tax (CHF m)	Income taxes (CHF m)	Tax rate (%)
Group's effective tax rate – Core basis	**18,268**	**(4,864)**	**26.6**	**17,423**	**(4,735)**	**27.2**
Global restructuring plans	(1,210)	248	20.5	(1,235)	270	21.9
Goodwill and intangible assets	(5,209)	1,380	26.5	(3,291)	1,233	37.5
Alliances and business combinations	345	2	–0.6	181	41	–22.7
Legal and environmental cases	76	(46)	60.5	(87)	30	34.5
Transitional effect of changes in US tax rates	–	(116)	–	–	–	–
Normalisation of equity compensation plan tax benefit	–	(31)	–	–	(108)	–
Other	(22)	4	18.2	16	(5)	31.3
Group's effective tax rate – IFRS basis	**12,248**	**(3,423)**	**27.9**	**13,007**	**(3,274)**	**25.2**

Financial position

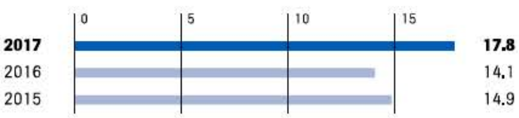
The decrease in net debt was due to free cash flow of CHF 13.4 billion, partly offset by dividend payments of CHF 7.1 billion. The net pension liability decreased due to improved asset performance. The net tax liabilities decreased mainly due to the deferred tax impact from the impairment of intangible assets, partially offset by the deferred tax impact from the changes in US tax rates announced in late 2017. At 31 December 2017 the Group held financial long-term assets with a market value of CHF 0.5 billion, which consist mostly of holdings in biotechnology and other pharmaceuticals companies acquired as part of licensing transactions or scientific collaborations. Compared to the start of the year, the Swiss franc appreciated against the US dollar, which had a positive translation impact on the Group's net debt, due to the US dollar-denominated debt translating into a lower Swiss franc amount at year-end.

Free cash flow

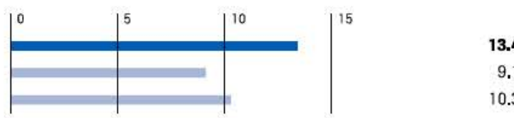
The cash outflow from treasury activities decreased to CHF 0.5 billion due to lower pension contributions and lower interest payments in 2017, as well as the base effect of investments in financial long-term assets in 2016. Total taxes paid in 2017 were up by 5% to CHF 3.9 billion due to higher tax payments in the US.

Cash flows and net debt

Operating free cash flow in billions of CHF



Free cash flow in billions of CHF



Free cash flow in millions of CHF

	Pharmaceuticals	Diagnostics	Corporate	Group
2017				
Operating profit – IFRS basis	13,242	304	(543)	13,003
Operating profit cash adjustments	5,990	2,628	(8)	8,610
Operating profit, net of operating cash adjustments	**19,232**	**2,932**	**(551)**	**21,613**
(Increase) decrease in net working capital	297	118	12	427
Investments in property, plant and equipment	(2,061)	(1,444)	(4)	(3,509)
Investments in intangible assets	(651)	(53)	0	(704)
Operating free cash flow	**16,817**	**1,553**	**(543)**	**17,827**
Treasury activities				(498)
Taxes paid				(3,909)
Free cash flow				**13,420**
2016				
Operating profit – IFRS basis	13,285	1,213	(429)	14,069
Operating profit cash adjustments	4,659	1,576	(50)	6,185
Operating profit, net of operating cash adjustments	**17,944**	**2,789**	**(479)**	**20,254**
(Increase) decrease in net working capital	(586)	(430)	(7)	(1,023)
Investments in property, plant and equipment	(2,510)	(1,627)	(7)	(4,144)
Investments in intangible assets	(989)	(12)	0	(1,001)
Operating free cash flow	**13,859**	**720**	**(493)**	**14,086**
Treasury activities				(1,218)
Taxes paid				(3,738)
Free cash flow				**9,130**

For the definition of free cash flow and a detailed breakdown see pages 144–146.

Operating free cash flow increased by CHF 3.7 billion, or 26% at CER, to CHF 17.8 billion. A major factor in this significant increase was the growth in the underlying cash generated from operations, which increased by 7% to CHF 21.6 billion. The lower net working capital also contributed to the overall operating free cash flow and, compared to the increase in net working capital in 2016, especially impacted the year-on-year growth rate. In addition, capital expenditure was 15% lower than 2016.

The cash outflow from treasury activities went down to CHF 0.5 billion due to lower pension contributions and lower interest payments in 2017 as well as the base effect of higher investments in financial long-term assets in 2016. Taxes paid were 5% higher at CHF 3.9 billion due to higher US tax payments. The free cash flow of CHF 13.4 billion was significantly higher than in 2016, due to the higher operating free cash flow and lower net cash outflow from treasury operations.

Net debt in millions of CHF

At 1 January 2017	
Cash and cash equivalents	4,163
Marketable securities	4,944
Long-term debt	(16,992)
Short-term debt	(5,363)
Net debt at beginning of period	**(13,248)**
Change in net debt during 2017	
Free cash flow	13,420
Dividend payments	(7,140)
Transactions in own equity instruments	(358)
Business combinations, net of divestments of subsidiaries	(269)
Hedging and collateral arrangements	235
Currency translation, fair value and other movements	397
Change in net debt	**6,285**
At 31 December 2017	
Cash and cash equivalents	4,719
Marketable securities	7,278
Long-term debt	(15,839)
Short-term debt	(3,121)
Net debt at end of period	**(6,963)**

For the definition of net debt see page 147.

Net debt – currency profile in millions of CHF

	Cash and marketable securities 2017	2016	Debt 2017	2016
US dollar [1]	1,935	1,106	(14,991)	(16,073)
Euro	4,422	2,986	(2,907)	(2,852)
Swiss franc	2,751	2,411	(2,607)	(2,605)
Japanese yen	2,057	1,656	(3)	(6)
Pound sterling	278	271	(247)	(249)
Other	554	677	1,795	(570)
Total	**11,997**	**9,107**	**(18,960)**	**(22,355)**

1) US dollar-denominated debt includes those bonds and notes denominated in euros that were swapped into US dollars, and therefore in the consolidated results they have economic characteristics equivalent to US dollar-denominated bonds and notes.

The net debt position of the Group at 31 December 2017 was CHF 7.0 billion, a decrease of CHF 6.3 billion from 31 December 2016. The decrease was due to the strong free cash flow partly offset by dividend payments of CHF 7.1 billion.

The issuance, redemption and repurchase of bonds and notes during 2017 (see Note 20 to the Annual Financial Statements) had an impact on liquid funds, but had no impact on the net debt position.

Contractual obligations and commitments

The Group has obligations and commitments, as set out in the table below. Carrying values are as shown in the consolidated balance sheet. The potential obligations shown are not discounted and are not risk-adjusted. Any amounts denominated in foreign currencies are translated into Swiss francs at the 31 December 2017 exchange rates.

Contractual obligations and commitments as at 31 December 2017 in millions of CHF

	Potential obligation (undiscounted)					
	Less than 1 year	1–2 years	2–5 years	Over 5 years	Total	Carrying value
On-balance sheet						
Debt [20]						
– Bonds and notes	2,661	2,422	5,461	12,199	22,743	17,986
– Other debt	970	1	3	0	974	974
Contingent consideration provisions [19, 29]	197	197	735	294	1,423	591
Accounts payable [16]	3,454	0	0	0	3,454	3,454
Derivative financial instruments [18]	93	10	15	1	119	119
Unfunded defined benefit plans [25]	157	162	529	6,465	7,313	5,411
Total on-balance sheet commitments	**7,532**	**2,792**	**6,743**	**18,959**	**36,026**	**28,535**
Off-balance sheet						
Capital commitments for property, plant and equipment [7]	1,049	112	23	0	1,184	0
Operating leases [7]	366	272	480	228	1,346	0
Contract manufacturing commitments [29]	398	284	818	355	1,855	0
Alliance collaboration commitments [9]	837	433	804	496	2,570	0
Total off-balance sheet commitments	**2,650**	**1,101**	**2,125**	**1,079**	**6,955**	**0**
Total contractual commitments	**10,182**	**3,893**	**8,868**	**20,038**	**42,981**	**28,535**

References are to the Notes in the Annual Financial Statements.

Debt. This consists mainly of bonds and notes and includes the principal and interest on the Group's debt instruments. Other debt is mainly commercial paper. The carrying values are discounted based on the interest rates inherent in the instruments.

Contingent consideration provisions. These are potential payments arising from business combinations. The carrying values are risk-adjusted and discounted.

Unfunded defined benefit plans. These are mainly the pension plans in the Group's German affiliates, where the fully reserved pension obligations are invested in the local affiliate's operations. The carrying values are discounted. Future company contributions to the Group's funded plans are not shown in the above table.

Capital commitments for property, plant and equipment. These are non-cancellable commitments for the purchase and construction mainly at the Roche sites in Basel (Switzerland), Mannheim (Germany) and South San Francisco (US) and also at the Chugai sites.

Operating leases. These are the future obligations under non-cancellable lease contracts. In 2019 the Group will implement IFRS 16 'Leases' and at that point these obligations will be reported in the balance sheet.

Contract manufacturing commitments. These are the future minimum take-or-pay commitments to purchase inventories arising from the Group's major long-term agreements with external Contract Manufacturing Organisations ('CMOs').

Alliance collaboration commitments. These are potential upfront and milestone payments that may become due from the Group's in-licensing arrangements. Potential payments to alliance partners and for asset deals within the next three years are included assuming all projects currently in development are successful. Potential payments beyond three years are only included for asset deals.

Provisions for legal and environmental matters. These are not included in the above table as the timing and amount of any cash outflow is uncertain and contingent on the development of the matters in question.

Pensions and other post-employment benefits

Post-employment benefit plans are classified for IFRS as 'defined contribution plans' if the Group pays fixed contributions into a separate fund or to a third-party financial institution and will have no further legal or constructive obligation to pay further contributions. In 2017 expenses for the Group's defined contribution plans were CHF 482 million (2016: CHF 473 million). All other plans are classified as 'defined benefit plans', even if the Group's potential obligation is minor or has a relatively remote possibility of arising. Plans are usually established as trusts which are independent of the Group and are funded by payments from the Group and by employees, but in some cases the plan is unfunded and the Group pays pensions to retired employees directly from its own financial resources.

Defined benefit plans

During 2016 operating income of CHF 426 million was recorded for past service costs from changes to the Group's pension plans in Switzerland. This represents the impact of the adjustment of the pension liability for the plan changes announced in 2016. In 2017 expenses for the Group's defined benefit plans were CHF 658 million (2016 excluding past service costs: CHF 718 million). Based on the revised actuarial assumptions at the end of 2017, expenses for the Group's defined benefit plans in 2018 are expected to be approximately CHF 651 million, in line with 2017. These estimates for 2018 pension expenses do not include any settlement or past service/curtailment effects that might arise during the year.

Funding status and balance sheet position

	2017 (CHF m)	2016 (CHF m)
Funded plans		
– Fair value of plan assets	14,356	13,571
– Defined benefit obligation	(15,705)	(15,734)
Over (under) funding	**(1,349)**	**(2,163)**
Unfunded plans		
– Defined benefit obligation	(5,411)	(4,931)
Total funding status	**(6,760)**	**(7,094)**
Limit on asset recognition	0	0
Reimbursement rights	140	154
Net recognised asset (liability)	**(6,620)**	**(6,940)**

Overall the funding status on an IFRS basis of the Group's funded defined benefit plans increased to 91% compared to 86% at the start of the year. Plan assets increased by CHF 0.8 billion driven by higher returns on assets which are partially offset by other items including settlement payments made in the US and Ireland. The funded status of the pension funds is monitored by the local pension fund governance bodies as well as being closely reviewed at a Group level. During 2017 additional contributions were paid into the Group's pension plans in the US and the UK. The total cash outflow from the Group's defined benefit plans in 2017 was CHF 538 million compared to CHF 880 million in 2016, which included additional contributions that were paid into the Group's pension plans in Switzerland, the US and Ireland in that year.

The unfunded plans are mainly those in the Group's German affiliates, where the fully reserved pension obligations are invested in the local affiliate's operations. The unfunded liabilities for these plans increased by CHF 480 million during 2017 mainly due to the currency translation effect from the increase in the euro against the Swiss franc during the year.

Full details of the Group's pensions and other post-employment benefits are given in Note 25 to the Annual Financial Statements.

Roche shares

Share price and market capitalisation (at 31 December)

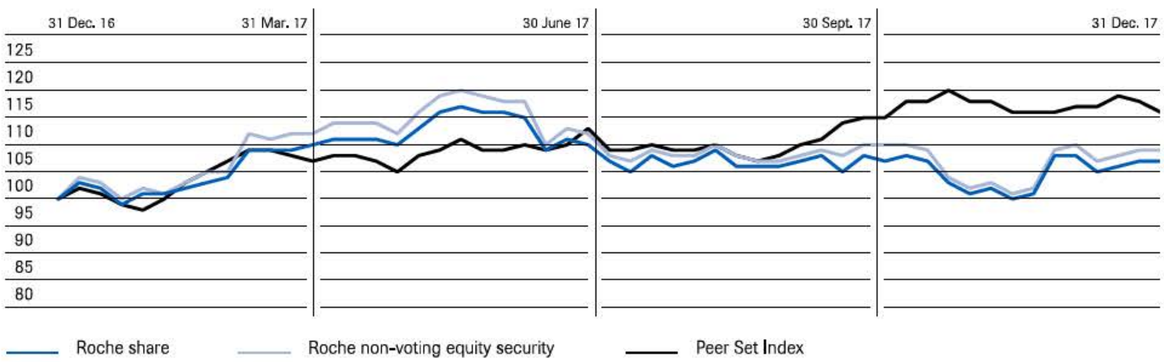
	2017	2016	% change (CHF)
Share price (CHF)	246.20	238.00	+3.4
Non-voting equity security *(Genussschein)* price (CHF)	246.50	232.60	+6.0
Market capitalisation (billions of CHF)	210	199	+5.7

In 2017 Roche ranked number 11 among a peer group consisting of Roche and 15 other healthcare companies[1] for Total Shareholder Return (TSR), defined as share price growth plus dividends, measured in Swiss francs at actual exchange rates. At constant exchange rates (CER) Roche ranked number 10, with the year-end return being +7% for Roche shares and +9% for Roche non-voting equity securities. The combined performance of share and non-voting equity security was +9% compared to a weighted average return for the peer group of +16% in CHF terms and +18% at CER.

The healthcare sector experienced a positive performance together with the world markets in 2017 driven by a recovery in the global economy and the normalisation of monetary policy in both the US and the EU being more gradual than expected. The Swiss Market Index (SMI) posted gains in 2017. However, the performance was mixed relative to other major global indices, as currency movements continued to influence investors' exposure to Swiss equities, with the SMI underperforming major US indices but outperforming European indices. In this context, even with positive read-outs at the end of the 2017, the Roche share performance continues to be impacted by investor concern over the biosimilar impact and competition in cancer immunotherapy.

1) Peer group for 2017: Abbott, AbbVie, Amgen, Astellas, AstraZeneca, Bayer, Bristol-Myers Squibb, GlaxoSmithKline, Johnson & Johnson, Lilly, Merck & Co., Novartis, Pfizer, Roche, Sanofi and Takeda.

Total Shareholder Return development



Source: Datastream. Data for Roche and the peer index has been re-based to 100 at 1 January 2017. The Peer Index was converted into Swiss francs at daily actual exchange rates. Currency fluctuations have an influence on the representation of the relative performance of Roche versus the peer index.

Proposed dividend

The Board of Directors is proposing an increase of 1% in the dividend for 2017 to CHF 8.30 per share and non-voting equity security (2016: CHF 8.20) for approval at the Annual General Meeting. This is the 31st consecutive increase in the dividend. If the dividend proposal is approved by shareholders, dividend payments on the total shares and non-voting equity securities will amount to CHF 7.2 billion (2016: CHF 7.1 billion), resulting in a pay-out ratio (based on core net income) of 54.1% (2016: 56.4%). Based on the prices at year-end 2017, the dividend yield on the Roche share was 3.4% (2016: 3.4%) and the yield on the non-voting equity security was 3.4% (2016: 3.5%). Further information on the Roche securities is given on pages 149 to 150.

Information per share and non-voting equity security

	2017 (CHF)	2016 (CHF)	% change (CHF)
EPS – Basic	10.12	11.24	–10
EPS – Diluted	10.04	11.13	–10
Core EPS – Basic	15.47	14.68	+5
Core EPS – Diluted	15.34	14.53	+6
Equity attributable to Roche shareholders per share	30.97	28.07	+10
Dividend per share	8.30	8.20	+1

For further details please refer to Notes 21 and 27 of the Annual Financial Statements and page 144. The pay-out ratio is calculated as dividend per share divided by core earnings per share.

Debt

Debt redemptions. During 2017 there were the following redemptions:
- On the due date of 23 March 2017 of CHF 1,500 million of bonds.
- On the due date of 29 September 2017 of USD 1,150 million of bonds.
- On 17 November 2017 the Group completed a tender offer to repurchase EUR 176 million of notes due 4 March 2021 and GBP 123 million of notes due 29 August 2023.

Debt issuances. During 2017 there were the following issuances:
- On 23 March 2017 the Group issued CHF 400 million of bonds due on 23 September 2018, CHF 750 million of bonds due on 23 September 2024 and CHF 350 million of bonds due on 23 March 2029.

All the above transactions are further described in Note 20 to the Annual Financial Statements.

The maturity schedule of the Group's bonds and notes outstanding at 31 December 2017 is shown in the table below.

Bonds and notes: nominal amounts at 31 December 2017 by contractual maturity

	US dollar (USD m)	Euro (EUR m)	Pound sterling (GBP m)	Swiss franc (CHF m)	Total[1] (USD m)	Total[1] (CHF m)
2018	–	1,000	–	1,000	2,216	2,169
2019	2,000	–	–	–	2,000	1,957
2020	600	–	–	–	600	587
2021	1,300	1,140[2]	–	–	2,662	2,605
2022	650	–	–	500	1,161	1,136
2023–2027	4,500	1,650	77	750	7,340	7,183
2028 and beyond	2,164	–	–	350	2,521	2,467
Total	**11,214**	**3,790**	**77**	**2,600**	**18,500**	**18,104**

1) Total translated at 31 December 2017 exchange rates.
2) Of the proceeds from these bonds and notes, EUR 850 million has been swapped into US dollars, and therefore in the consolidated results these bonds and notes have economic characteristics equivalent to US dollar-denominated bonds and notes.

The Group plans to meet its debt obligations using existing liquid funds as well as cash generated from business operations. In 2017 the free cash flow was CHF 13.4 billion, which included the cash generated from operations, as well as payment of interest and tax.

For short-term financing requirements, the Group has a commercial paper programme in the US under which it can issue up to USD 7.5 billion of unsecured commercial paper notes and has committed credit lines of USD 7.5 billion available as back-stop lines. Commercial paper notes totalling USD 0.8 billion were outstanding as of 31 December 2017 (2016: USD 2.1 billion). For longer-term financing the Group maintains strong long-term investment-grade credit ratings of AA by Standard & Poor's and A1 by Moody's which should facilitate efficient access to international capital markets.

Further information on the Group's debt is given in Note 20 to the Annual Financial Statements.

Credit ratings for the Roche Group at 31 December 2017

	Short-term	Long-term	Outlook
Moody's	P-1	A1	Stable
Standard & Poor's	A-1+	AA	Stable

Financial risks

At 31 December 2017 the Group has a net debt position of CHF 7.0 billion (2016: CHF 13.2 billion). The financial assets of the Group are managed in a conservative way with the objective to meet the Group's financial obligations at all times.

Asset allocation. A considerable portion of the cash and marketable securities the Group currently holds is being used for debt redemptions. Liquid funds are either held as cash or are invested in high-quality, investment-grade fixed income securities with an investment horizon to meet those liquidity requirements.

Cash and marketable securities

	(CHF m)	2017 (% of total)	(CHF m)	2016 (% of total)
Cash and cash equivalents	4,719	39	4,163	46
Money market instruments	6,107	51	3,366	36
Debt securities	1,161	10	1,509	17
Equity securities	10	0	69	1
Total cash and marketable securities	**11,997**	**100**	**9,107**	**100**

Credit risk. Credit risk arises from the possibility that counterparties to transactions may default on their obligations causing financial losses for the Group. The rating profile of the Group's CHF 12.0 billion of cash and fixed income marketable securities remained strong with 91% being invested in the A-AAA range. The Group has signed netting and collateral agreements with the counterparties in order to mitigate counterparty risk on derivative positions.

The Group has trade receivables of CHF 10.4 billion. Since the beginning of 2010 there have been financial difficulties in Southern European countries, notably Spain, Italy, Greece and Portugal. The Group is a leading supplier to the healthcare sectors in these countries and at 31 December 2017 has trade receivables of EUR 0.5 billion (CHF 0.6 billion) with public customers in these countries. This is an increase of 13% compared to 31 December 2016 in euro terms due to the substantial collections in late 2016 prior to the year-end. The Group uses different measures to improve collections in these countries, including intense communication with customers, factoring, negotiations of payment plans, charging of interest for late payments, and legal actions. Since 2011 the Group's trade receivables balance in Southern Europe has decreased by 60% in euro terms.

Liquidity risk. Liquidity risk arises through a surplus of financial obligations over available financial assets due at any point in time. The Group's approach to liquidity risk is to maintain sufficient readily available reserves in order to meet its liquidity requirements at any point in time. In addition to the current liquidity position, the Group has good cash generation ability. Those future cash flows will be used to repay debt instruments in the coming years.

Roche enjoys strong long-term investment-grade credit ratings of AA by Standard & Poor's and A1 by Moody's. At the same time Roche is rated at the highest available short-term ratings by those agencies. In the event of financing requirements, the ratings and overall creditworthiness of the Roche Group should permit efficient access to international capital markets, including the commercial paper market. The Group has committed credit lines with various financial institutions totalling USD 7.5 billion available as back-stop lines for the commercial paper programme. As at 31 December 2017 no debt has been drawn under these credit lines.

Market risk. Market risk arises from changing market prices of the Group's financial assets or financial liabilities. The exposures are predominantly related to changes in interest rates, foreign exchange rates and equity prices. The Group uses Value-at-Risk (VaR) to assess the impact of market risk on its financial instruments. VaR data indicates the value range within which a given financial instrument will fluctuate with a pre-set probability as a result of movements in market prices. The Group's VaR remained stable during 2017.

Interest rate risk. Interest rate risk arises from movements in interest rates which could affect the Group financial result or the value of the Group equity. The Group may use interest rate derivatives to manage its interest-rate-related exposure and financial result.

Further information on financial risk management and financial risks and the VaR methodology is included in Note 29 to the Annual Financial Statements.

International Financial Reporting Standards

The Roche Group has been using International Financial Reporting Standards (IFRS) to report its consolidated results since 1990. In 2017 the Group has implemented various minor amendments to existing standards and interpretations, which have no material impact on the Group's overall results and financial position.

New and revised standards that will be applied in 2018

The Group has assessed the expected impacts of the various new and revised standards and interpretations that will be mandatory from 1 January 2018 which the Group has not yet applied, as summarised below. The Group does not anticipate that these will have a material impact on the Group's overall results and financial position. Furthermore, no restatements of the 2017 comparative results will be necessary when the new standards are applied in 2018. See Note 32 to the Annual Financial Statements for further details.

IFRS 9 'Financial Instruments'. The Group will implement the new standard effective 1 January 2018 and will apply the exemption from full retrospective application for the classification and measurement requirements, including impairment, meaning that the comparative 2017 results will not be restated when the new standard is applied. The standard deals with the classification, recognition and measurement (including impairment) of financial instruments, the impairment of financial assets, including trade and lease receivables and also introduces a new hedge accounting model.

IFRS 15 'Revenues from Contracts with Customers'. The Group will implement the new standard effective 1 January 2018 and will apply the full retrospective method for the transition. Since the new standard does not change the amounts of revenue recognised for 2017 no restatements of the comparative 2017 results will be necessary. The new standard contains a new set of principles on when and how to recognise and measure revenue as well as new requirements related to presentation. The core principle in that framework is that revenue should be recognised dependent on the transfer of promised goods or services to the customer for an amount that reflects the consideration which should be received in exchange for those goods or services.

New and revised standards that will be applied in 2019 and beyond

IFRS 16 'Leases'. The Group will implement the new standard effective 1 January 2019 and will apply the cumulative catch-up method option for the transition, meaning that the comparative 2018 results will not be restated when the new standard is applied. The main impact of the new standard will be to bring operating leases on-balance sheet. The Group is assessing the potential impact, but currently anticipates that the new standard will result in the carrying value of leased assets being increased by approximately CHF 1.2 billion, with lease liabilities increased by a similar amount at the date of implementation. The application of the new standard will result in part of what is currently reported as operating lease costs being recorded as interest expenses. Given the leases involved and the prevailing low interest rate environment the Group does not currently expect this effect to be material.

See Note 32 to the Annual Financial Statements for further details of these matters.

Roche Group
Consolidated Financial Statements

Roche Group consolidated income statement for the year ended 31 December 2017 in millions of CHF

	Pharmaceuticals	Diagnostics	Corporate	Group
Sales [2]	**41,220**	**12,079**	**–**	**53,299**
Royalties and other operating income [2]	2,284	163	–	2,447
Cost of sales	(11,978)	(6,201)	–	(18,179)
Marketing and distribution	(6,960)	(2,887)	–	(9,847)
Research and development [2]	(9,704)	(1,588)	–	(11,292)
General and administration	(1,620)	(1,262)	(543)	(3,425)
Operating profit [2]	**13,242**	**304**	**(543)**	**13,003**
Financing costs [3]				(839)
Other financial income (expense) [3]				84
Profit before taxes				**12,248**
Income taxes [4]				(3,423)
Net income				**8,825**
Attributable to				
– Roche shareholders [21]				8,633
– Non-controlling interests [23]				192
Earnings per share and non-voting equity security [27]				
Basic (CHF)				10.12
Diluted (CHF)				10.04

Roche Group consolidated income statement for the year ended 31 December 2016 in millions of CHF

	Pharmaceuticals	Diagnostics	Corporate	Group
Sales [2]	**39,103**	**11,473**	**–**	**50,576**
Royalties and other operating income [2]	1,944	116	–	2,060
Cost of sales	(10,393)	(5,787)	–	(16,180)
Marketing and distribution	(6,391)	(2,749)	–	(9,140)
Research and development [2]	(10,156)	(1,376)	–	(11,532)
General and administration	(822)	(464)	(429)	(1,715)
Operating profit [2]	**13,285**	**1,213**	**(429)**	**14,069**
Financing costs [3]				(1,099)
Other financial income (expense) [3]				37
Profit before taxes				**13,007**
Income taxes [4]				(3,274)
Net income				**9,733**
Attributable to				
– Roche shareholders [21]				9,576
– Non-controlling interests [23]				157
Earnings per share and non-voting equity security [27]				
Basic (CHF)				11.24
Diluted (CHF)				11.13

Roche Group consolidated statement of comprehensive income in millions of CHF

	Year ended 31 December 2017	2016
Net income recognised in income statement	**8,825**	**9,733**
Other comprehensive income		
Remeasurements of defined benefit plans [21]	404	174
Items that will never be reclassified to the income statement	**404**	**174**
Available-for-sale investments [21]	(22)	20
Cash flow hedges [21]	(11)	55
Currency translation of foreign operations [21]	362	496
Items that are or may be reclassified to the income statement	**329**	**571**
Other comprehensive income, net of tax	**733**	**745**
Total comprehensive income	**9,558**	**10,478**
Attributable to		
– Roche shareholders [21]	9,390	10,193
– Non-controlling interests [23]	168	285
Total	**9,558**	**10,478**

Roche Group consolidated balance sheet in millions of CHF

	31 December 2017	31 December 2016	31 December 2015
Non-current assets			
Property, plant and equipment [7]	20,912	19,957	18,473
Goodwill [8]	10,077	11,282	11,082
Intangible assets [9]	8,368	12,046	13,861
Deferred tax assets [4]	3,576	2,826	2,564
Defined benefit plan assets [25]	801	738	642
Other non-current assets [14]	1,370	1,300	959
Total non-current assets	**45,104**	**48,149**	**47,581**
Current assets			
Inventories [10]	7,407	7,928	7,648
Accounts receivable [11]	9,577	8,760	8,329
Current income tax assets [4]	348	335	239
Other current assets [15]	2,243	2,540	2,795
Marketable securities [12]	7,278	4,944	5,440
Cash and cash equivalents [13]	4,719	4,163	3,731
Total current assets	**31,572**	**28,670**	**28,182**
Total assets	**76,676**	**76,819**	**75,763**
Non-current liabilities			
Long-term debt [20]	(15,839)	(16,992)	(17,100)
Deferred tax liabilities [4]	(495)	(838)	(545)
Defined benefit plan liabilities [25]	(7,421)	(7,678)	(8,341)
Provisions [19]	(1,548)	(1,777)	(2,204)
Other non-current liabilities [17]	(206)	(532)	(505)
Total non-current liabilities	**(25,509)**	**(27,817)**	**(28,695)**
Current liabilities			
Short-term debt [20]	(3,121)	(5,363)	(6,151)
Current income tax liabilities [4]	(3,408)	(2,713)	(2,781)
Provisions [19]	(2,042)	(2,271)	(2,432)
Accounts payable [18]	(3,454)	(3,375)	(3,207)
Other current liabilities [18]	(10,135)	(8,878)	(9,197)
Total current liabilities	**(22,160)**	**(22,600)**	**(23,768)**
Total liabilities	**(47,669)**	**(50,417)**	**(52,463)**
Total net assets	**29,007**	**26,402**	**23,300**
Equity			
Capital and reserves attributable to Roche shareholders [21]	26,441	23,911	20,979
Equity attributable to non-controlling interests [23]	2,566	2,491	2,321
Total equity	**29,007**	**26,402**	**23,300**

https://www.roche.com/dam/jcr:b70415c0-954f-4a2a-a0e2-47f94bd280e0/en/fb17e.pdf

Roche Group consolidated statement of cash flows in millions of CHF

	Year ended 31 December 2017	2016
Cash flows from operating activities		
Cash generated from operations [28]	22,256	21,225
(Increase) decrease in net working capital	427	(1,023)
Payments made for defined benefit plans [25]	(538)	(880)
Utilisation of provisions [19]	(621)	(762)
Disposal of products	410	179
Other operating cash flows	(1)	–
Cash flows from operating activities, before income taxes paid	**21,933**	**18,739**
Income taxes paid	(3,909)	(3,738)
Total cash flows from operating activities	**18,024**	**15,001**
Cash flows from investing activities		
Purchase of property, plant and equipment	(3,509)	(4,144)
Purchase of intangible assets	(704)	(1,001)
Disposal of property, plant and equipment	100	151
Disposal of intangible assets	–	–
Business combinations [5]	(280)	(74)
Divestment of subsidiaries [22]	11	–
Interest and dividends received [28]	30	24
Sales of equity securities and debt securities	762	597
Purchases of equity securities and debt securities	(319)	(631)
Sales (purchases) of money market instruments and time accounts over three months, net	(2,612)	683
Other investing cash flows	62	(118)
Total cash flows from investing activities	**(6,459)**	**(4,513)**
Cash flows from financing activities		
Proceeds from issue of bonds and notes [20]	1,502	3,158
Redemption and repurchase of bonds and notes [20]	(3,068)	(3,985)
Increase (decrease) in commercial paper [20]	(1,258)	(454)
Increase (decrease) in other debt [20]	(385)	(133)
Hedging and collateral arrangements	235	(211)
Changes in non-controlling interests	–	–
Equity contribution by non-controlling interests	5	–
Interest paid	(648)	(849)
Dividends paid [28]	(7,140)	(7,040)
Equity-settled equity compensation plans, net of transactions in own equity [26]	(358)	(557)
Other financing cash flows	–	–
Total cash flows from financing activities	**(11,115)**	**(10,071)**
Net effect of currency translation on cash and cash equivalents	106	15
Increase (decrease) in cash and cash equivalents	**556**	**432**
Cash and cash equivalents at 1 January	4,163	3,731
Cash and cash equivalents at 31 December [13]	**4,719**	**4,163**

The Group has expanded the presentation of investing cash flows relating to marketable securities. Sales and purchases of money market instruments and time accounts over three months are now shown separately, on a net basis. The comparative period information has been restated accordingly.

Roche Group consolidated statement of changes in equity in millions of CHF

	Share capital	Retained earnings	Fair value reserves	Hedging reserves	Translation reserves	Total	Non-controlling interests	Total equity
Year ended 31 December 2016								
At 1 January 2016	**160**	**28,591**	**155**	**27**	**(7,954)**	**20,979**	**2,321**	**23,300**
Net income recognised in income statement	–	9,576	–	–	–	9,576	157	9,733
Available-for-sale investments	–	–	26	–	–	26	(6)	20
Cash flow hedges	–	–	–	37	–	37	18	55
Currency translation of foreign operations	–	–	4	(1)	365	368	128	496
Remeasurements of defined benefit plans	–	186	–	–	–	186	(12)	174
Total comprehensive income	**–**	**9,762**	**30**	**36**	**365**	**10,193**	**285**	**10,478**
Dividends	–	(6,909)	–	–	–	(6,909)	(132)	(7,041)
Equity compensation plans, net of transactions in own equity	–	(344)	–	–	–	(344)	9	(335)
Changes in non-controlling interests [23]	–	(8)	–	–	–	(8)	8	–
At 31 December 2016	**160**	**31,092**	**185**	**63**	**(7,589)**	**23,911**	**2,491**	**26,402**
Year ended 31 December 2017								
At 1 January 2017	**160**	**31,092**	**185**	**63**	**(7,589)**	**23,911**	**2,491**	**26,402**
Net income recognised in income statement	–	8,633	–	–	–	8,633	192	8,825
Available-for-sale investments	–	–	(26)	–	–	(26)	4	(22)
Cash flow hedges	–	–	–	–	–	–	(11)	(11)
Currency translation of foreign operations	–	–	(1)	(2)	385	382	(20)	362
Remeasurements of defined benefit plans	–	401	–	–	–	401	3	404
Total comprehensive income	**–**	**9,034**	**(27)**	**(2)**	**385**	**9,390**	**168**	**9,558**
Dividends	–	(6,998)	–	–	–	(6,998)	(121)	(7,119)
Equity compensation plans, net of transactions in own equity	–	146	–	–	–	146	15	161
Changes in non-controlling interests [23]	–	(8)	–	–	–	(8)	8	–
Equity contribution by non-controlling interests [23]	–	–	–	–	–	–	5	5
At 31 December 2017	**160**	**33,266**	**158**	**61**	**(7,204)**	**26,441**	**2,566**	**29,007**

Notes to the Roche Group Consolidated Financial Statements

1. General accounting principles

Basis of preparation

The consolidated financial statements (hereafter 'the Annual Financial Statements') of the Roche Group have been prepared in accordance with International Financial Reporting Standards (IFRS) and comply with Swiss law. They have been prepared using the historical cost convention except for items that are required to be accounted for at fair value. They were approved for issue by the Board of Directors on 29 January 2018 and are subject to approval by the Annual General Meeting of shareholders on 13 March 2018.

These financial statements are the Annual Financial Statements of Roche Holding Ltd, a company registered in Switzerland, and its subsidiaries ('the Group').

The Group's significant accounting policies and changes in accounting policies are disclosed in Note 32.

Key accounting judgements, estimates and assumptions

The preparation of the Annual Financial Statements requires management to make judgements, estimates and assumptions that affect the reported amounts of revenues, expenses, assets, liabilities and contingent amounts. Actual outcomes could differ from those management estimates. The estimates and underlying assumptions are reviewed on an ongoing basis and are based on historical experience and various other factors. Revisions to estimates are recognised in the period in which the estimate is revised. The following are considered to be the key accounting judgements, estimates and assumptions made and are believed to be appropriate based upon currently available information.

Revenue. The nature of the Group's business is such that many sales transactions do not have a simple structure and may consist of multiple components occurring at different times. The Group is also party to out-licensing agreements which involve upfront and milestone payments occurring over several years and which may also involve certain future obligations. Revenue is only recognised when, in management's judgement, the significant risks and rewards of ownership have been transferred and when the Group does not retain continuing managerial involvement or effective control over the goods sold or when the obligation has been fulfilled. For some transactions this can result in cash receipts being initially recognised as deferred income and then released to income over subsequent periods on the basis of the performance of the conditions specified in the agreement. There may be circumstances such that the level of sales returns, and hence revenues, cannot be reliably measured. In such cases sales are only recognised when the right of return expires, which is generally upon prescription of the products to patients. In order to estimate this, management uses publicly available information about prescriptions as well as information provided by wholesalers and other intermediaries.

Revenues from product sales are recorded net of allowances for estimated rebates, chargebacks, cash discounts and estimates of product returns, all of which are established at the time of sale. All product sales allowances are based on estimates of the amounts earned or to be claimed on the related sales. At 31 December 2017 the Group had CHF 3,023 million in provisions and accruals for expected sales returns, chargebacks and other rebates, including Medicaid in the US and similar rebates in other countries. The provisions and accruals relating to the US Pharmaceuticals business amounted to CHF 1,445 million, of which CHF 337 million related to expected sales returns. These estimates take into consideration historical experience, current contractual and statutory requirements, specific known market events and trends such as competitive pricing and new product introductions, estimated inventory levels, and the shelf life of products. If actual future results vary, these estimates need to be adjusted, which could have an effect on sales and earnings in the period of the adjustment. At 31 December 2017 the Group had CHF 517 million in provisions for doubtful receivables (see Note 11). Such estimates are based on analyses of ageing of customer balances, specific credit circumstances, historical trends and the Group's experience, taking also into account current economic conditions.

Business combinations. The Group initially recognises the fair value of identifiable assets acquired, the liabilities assumed, any non-controlling interest and the consideration transferred in a business combination. Management judgement is particularly involved in the recognition and fair value measurement of intellectual property, inventories, contingent liabilities and contingent consideration. In making this assessment, management considers the underlying economic substance of the items concerned in addition to the contractual terms.

Impairment. At 31 December 2017 the Group had CHF 20,912 million in property, plant and equipment (see Note 7), CHF 10,077 million in goodwill (see Note 8) and CHF 8,368 million in intangible assets (see Note 9). Goodwill and intangible assets not yet available for use are reviewed annually for impairment. Property, plant and equipment and intangible assets in use are assessed for impairment when there is a triggering event that provides evidence that an asset may be impaired. To assess whether any impairment exists, estimates of expected future cash flows are used. Actual outcomes could vary significantly from such estimates. Factors such as changes in discount rates, the planned use of buildings, machinery or equipment or closure of facilities, the presence of competition, technical obsolescence and lower-than-anticipated product sales could lead to shorter useful lives or impairment.

Pensions and other post-employment benefits. The Group operates a number of defined benefit plans and the fair values of the recognised plan assets and liabilities are based upon statistical and actuarial calculations. The measurement of the net defined benefit obligation is particularly sensitive to changes in the discount rate, inflation rate, expected mortality and medical cost trend rate assumptions. At 31 December 2017 the present value of the Group's defined benefit obligation is CHF 21,116 million (see Note 25). The actuarial assumptions used may differ materially from actual results due to changes in market and economic conditions, longer or shorter life spans of participants, and other changes in the factors being assessed. These differences could impact on the defined benefit plan assets and liabilities recognised in the balance sheet in future periods.

Legal provisions. The Group provides for anticipated legal settlement costs when there is a probable outflow of resources that can be reliably estimated. At 31 December 2017 the Group had CHF 485 million in legal provisions. The status of significant legal cases is disclosed in Note 19. These estimates consider the specific circumstances of each legal case, relevant legal advice and are inherently judgemental due to the highly complex nature of legal cases. The estimates could change substantially over time as new facts emerge and each legal case progresses. Where no reliable estimate can be made, no provision is recorded and contingent liabilities are disclosed where material.

Environmental provisions. The Group provides for anticipated environmental remediation costs when there is a probable outflow of resources that can be reasonably estimated. At 31 December 2017 the Group had CHF 523 million in environmental provisions (see Note 19). Environmental provisions consist primarily of costs to fully clean and refurbish contaminated sites, including landfills, and to treat and contain contamination at certain other sites. These estimates are inherently judgemental due to uncertainties related to the detection of previously unknown contamination, the method and extent of remediation, the percentage of the problematic materials attributable to the Group at the remediation sites, and the financial capabilities of other potentially responsible parties. The estimates could change substantially over time as new facts emerge and each environmental remediation progresses.

Contingent consideration provisions. The Group makes provision for the estimated fair value of contingent consideration arrangements arising from business combinations. At 31 December 2017 the Group had CHF 591 million in contingent consideration provisions (see Note 19) and the total potential payments under contingent consideration arrangements from business combinations could be up to CHF 1,423 million (see Note 29). The estimated amounts provided are the expected payments, determined by considering the possible scenarios of forecast sales and other performance criteria, the amount to be paid under each scenario, and the probability of each scenario, which is then discounted to a net present value. The estimates could change substantially over time as new facts emerge and each scenario develops.

Income taxes. At 31 December 2017 the Group had a current income tax net liability of CHF 3,060 million and a deferred tax net asset of CHF 3,081 million (see Note 4). Significant estimates are required to determine the current and deferred tax assets and liabilities. Some of these estimates are based on interpretations of existing tax laws or regulations. Where tax positions are uncertain, accruals are recorded within income tax liabilities for management's best estimate of the ultimate liability that is expected to arise based on the specific circumstances and the Group's historical experience. Factors that may have an impact on current and deferred taxes include changes in tax laws, regulations or rates, changing interpretations of existing tax laws or regulations, future levels of research and development spending and changes in pre-tax earnings.

Leases. The treatment of leasing transactions is mainly determined by whether the lease is considered to be an operating or finance lease. In making this assessment, management looks at the substance of the lease, as well as the legal form, and makes a judgement about whether substantially all of the risks and rewards of ownership are transferred. Arrangements which do not take the legal form of a lease but that nevertheless convey the right to use an asset are also covered by such assessments.

Consolidation. The Group periodically undertakes transactions that may involve obtaining control or significant influence of other companies. These transactions include equity acquisitions, asset purchases and alliance agreements. In all such cases management makes an assessment as to whether the Group has control or significant influence of the other company, and whether it should be consolidated as a subsidiary or accounted for as an associated company. In making this assessment, management considers the underlying economic substance of the transaction in addition to the contractual terms.

2. Operating segment information

The Group has two divisions, Pharmaceuticals and Diagnostics. Revenues are primarily generated from the sale of prescription pharmaceutical products and diagnostic instruments, reagents and consumables respectively. Both divisions also derive revenues from the sale or licensing of products or technology to third parties. Residual operating activities from divested businesses and certain global activities are reported as 'Corporate'. These include the Corporate Executive Committee and global group functions for communications, human resources, finance (including treasury, taxes and pension fund management), legal, safety and environmental services. Subdivisional information for Roche Pharmaceuticals and Chugai, operating segments within the Pharmaceuticals Division, is also presented.

Divisional information in millions of CHF

	Pharmaceuticals		Diagnostics		Corporate		Group	
	2017	2016	2017	2016	2017	2016	2017	2016
Revenues from external customers								
Sales	41,220	39,103	12,079	11,473	–	–	53,299	50,576
Royalties and other operating income	2,284	1,944	163	116	–	–	2,447	2,060
Total	**43,504**	**41,047**	**12,242**	**11,589**	**–**	**–**	**55,746**	**52,636**
Revenues from other operating segments								
Sales	–	–	14	13	–	–	14	13
Royalties and other operating income	–	–	–	–	–	–	–	–
Elimination of interdivisional revenue	–	–	–	–	–	–	(14)	(13)
Total	**–**	**–**	**14**	**13**	**–**	**–**	**–**	**–**
Segment results								
Operating profit	13,242	13,285	304	1,213	(543)	(429)	13,003	14,069
Capital expenditure								
Business combinations	–	–	193	–	–	–	193	–
Additions to property, plant and equipment	2,030	2,154	1,443	1,629	4	7	3,477	3,790
Additions to intangible assets	736	1,033	33	32	–	–	769	1,065
Total	**2,766**	**3,187**	**1,669**	**1,661**	**4**	**7**	**4,439**	**4,855**
Research and development								
Research and development costs	9,704	10,156	1,588	1,376	–	–	11,292	11,532
Other segment information								
Depreciation of property, plant and equipment	1,165	1,212	1,024	938	7	8	2,196	2,158
Amortisation of intangible assets	1,359	1,452	332	331	–	–	1,691	1,783
Impairment of property, plant and equipment	184	256	37	35	12	–	233	291
Impairment of goodwill	384	95	674	–	–	–	1,058	95
Impairment of intangible assets	2,188	1,343	272	70	–	–	2,460	1,413
Inventory fair value adjustment	–	167	–	–	–	–	–	167
Equity compensation plan expenses	388	371	73	69	34	33	495	473

Pharmaceuticals subdivisional information in millions of CHF

	Roche Pharmaceuticals 2017	Roche Pharmaceuticals 2016	Chugai 2017	Chugai 2016	Pharmaceuticals Division 2017	Pharmaceuticals Division 2016
Revenues from external customers						
Sales	37,507	35,392	3,713	3,711	41,220	39,103
Royalties and other operating income	2,231	1,912	53	32	2,284	1,944
Total	**39,738**	**37,304**	**3,766**	**3,743**	**43,504**	**41,047**
Revenues from other operating segments						
Sales	1,222	1,363	670	568	1,892	1,931
Royalties and other operating income	82	58	257	141	339	199
Elimination of income within division	–	–	–	–	(2,231)	(2,130)
Total	**1,304**	**1,421**	**927**	**709**	**–**	**–**
Segment results						
Operating profit	12,395	12,476	856	682	13,251	13,158
Elimination of results within division	–	–	–	–	(9)	127
Operating profit	**12,395**	**12,476**	**856**	**682**	**13,242**	**13,285**
Capital expenditure						
Business combinations	–	–	–	–	–	–
Additions to property, plant and equipment	1,732	1,978	298	176	2,030	2,154
Additions to intangible assets	700	964	36	69	736	1,033
Total	**2,432**	**2,942**	**334**	**245**	**2,766**	**3,187**
Research and development						
Research and development costs	9,012	9,399	834	784	9,846	10,183
Elimination of costs within division	–	–	–	–	(142)	(27)
Total	**9,012**	**9,399**	**834**	**784**	**9,704**	**10,156**
Other segment information						
Depreciation of property, plant and equipment	1,039	1,080	126	132	1,165	1,212
Amortisation of intangible assets	1,344	1,437	15	15	1,359	1,452
Impairment of property, plant and equipment	184	255	–	1	184	256
Impairment of goodwill	384	95	–	–	384	95
Impairment of intangible assets	2,168	1,323	20	20	2,188	1,343
Inventory fair value adjustment	–	167	–	–	–	167
Equity compensation plan expenses	384	367	4	4	388	371

Net operating assets in millions of CHF

	Assets 2017	Assets 2016	Assets 2015	Liabilities 2017	Liabilities 2016	Liabilities 2015	Net assets 2017	Net assets 2016	Net assets 2015
Pharmaceuticals	39,174	42,212	42,460	(12,215)	(11,456)	(11,844)	26,959	30,756	30,616
Diagnostics	19,833	20,329	19,408	(4,390)	(4,141)	(3,976)	15,443	16,188	15,432
Corporate	133	146	149	(430)	(463)	(515)	(297)	(317)	(366)
Total operating	**59,140**	**62,687**	**62,017**	**(17,035)**	**(16,060)**	**(16,335)**	**42,105**	**46,627**	**45,682**
Non-operating	17,536	14,132	13,746	(30,634)	(34,357)	(36,128)	(13,098)	(20,225)	(22,382)
Group	**76,676**	**76,819**	**75,763**	**(47,669)**	**(50,417)**	**(52,463)**	**29,007**	**26,402**	**23,300**

Net operating assets – Pharmaceuticals subdivisional information in millions of CHF

	Assets 2017	Assets 2016	Assets 2015	Liabilities 2017	Liabilities 2016	Liabilities 2015	Net assets 2017	Net assets 2016	Net assets 2015
Roche Pharmaceuticals	35,690	38,783	39,696	(11,930)	(11,175)	(11,514)	23,760	27,608	28,182
Chugai	4,900	4,897	4,246	(974)	(1,025)	(1,002)	3,926	3,872	3,244
Elimination within division	(1,416)	(1,468)	(1,482)	689	744	672	(727)	(724)	(810)
Pharmaceuticals Division	**39,174**	**42,212**	**42,460**	**(12,215)**	**(11,456)**	**(11,844)**	**26,959**	**30,756**	**30,616**

Information by geographical area in millions of CHF

	Revenues from external customers: Sales	Revenues from external customers: Royalties and other operating income	Property, plant and equipment	Non-current assets: Goodwill and intangible assets
2017				
Switzerland	574	480	5,411	2,723
Germany	3,041	29	4,038	1,042
Rest of Europe	10,135	17	982	482
Europe	**13,750**	**526**	**10,431**	**4,247**
United States	23,122	1,853	6,685	13,956
Rest of North America	897	1	74	21
North America	**24,019**	**1,854**	**6,759**	**13,977**
Latin America	3,024	–	328	9
Japan	4,214	53	1,611	208
Rest of Asia	6,824	14	1,671	2
Asia	**11,038**	**67**	**3,282**	**210**
Africa, Australia and Oceania	1,468	–	112	2
Total	**53,299**	**2,447**	**20,912**	**18,445**
2016				
Switzerland	577	219	5,028	3,294
Germany	3,004	28	3,623	1,038
Rest of Europe	10,264	3	957	355
Europe	**13,845**	**250**	**9,608**	**4,687**
United States	21,192	1,767	6,758	18,417
Rest of North America	851	1	90	–
North America	**22,043**	**1,768**	**6,848**	**18,417**
Latin America	2,681	–	354	10
Japan	4,211	32	1,483	209
Rest of Asia	6,461	10	1,559	3
Asia	**10,672**	**42**	**3,042**	**212**
Africa, Australia and Oceania	1,335	–	105	2
Total	**50,576**	**2,060**	**19,957**	**23,328**

Supplementary unaudited information on sales by therapeutic areas in the Pharmaceuticals Division and by business areas in the Diagnostics Division are given in the Financial Review. Sales are allocated to geographical areas by destination according to the location of the customer. Royalties and other operating income are allocated according to the location of the Group company that receives the revenue.

Major customers

In total three US national wholesale distributors represent approximately a third of the Group's revenues in 2017. The three US national wholesale distributors are McKesson Corp. with CHF 7 billion (2016: CHF 6 billion), AmerisourceBergen Corp. with CHF 6 billion (2016: CHF 6 billion) and Cardinal Health, Inc. with CHF 5 billion (2016: CHF 4 billion). Approximately 96% of these revenues were in the Pharmaceuticals operating segment, with the residual in the Diagnostics segment.

Supplementary revenues information

Revenues from product sales are recorded net of allowances for estimated rebates, chargebacks, cash discounts and estimates of product returns, all of which are established at the time of sale. All product sales allowances are based on estimates of the amounts earned or to be claimed on the related sales. These estimates take into consideration historical experience, current contractual and statutory requirements, specific known market events and trends such as competitive pricing and new product introductions, estimated inventory levels, and the shelf life of products. If actual future results vary, these estimates need to be adjusted, which could have an effect on sales and earnings in the period of the adjustment.

The gross-to-net sales reconciliation for the Pharmaceuticals Division is shown in the table below. The companies in the Diagnostics Division have similar reconciling items, but at much lower amounts.

Pharmaceuticals Division sales gross-to-net reconciliation in millions of CHF

	2017	2016
Gross sales	49,502	45,774
Government and regulatory mandatory price reductions	(5,490)	(4,414)
Contractual price reductions	(2,078)	(1,702)
Cash discounts	(432)	(369)
Customer returns reserves	(133)	(86)
Others	(149)	(100)
Net sales	**41,220**	**39,103**

Government and regulatory mandatory price reductions. These consist of mandatory price reductions. The major elements are 340B Drug Discount Program, Medicaid, and other plans in the US, which totalled USD 4.7 billion, equivalent to CHF 4.7 billion (2016: USD 3.7 billion, equivalent to CHF 3.7 billion).

Contractual price reductions. These include rebates and chargebacks that are the result of contractual agreements that are primarily volume-based and performance-based.

Cash discounts. These include credits offered to wholesalers for remitting payment on their purchases within contractually defined incentive periods.

Customer returns reserves. These are allowances established for expected product returns.

Sales reductions that are expected to be withheld by the customer upon settlement, such as contractual price reductions and cash discounts, are recorded in the balance sheet as a deduction from trade receivables (see Note 11). Sales reductions that are separately payable to customers, governmental health authorities or healthcare regulatory authorities are recorded in the balance sheet as accrued liabilities (see Note 18). Provisions for sales returns are recorded in the balance sheet as other provisions (see Note 19).

Revenues – Royalties and other operating income in millions of CHF

	2017	2016
Royalty income	1,662	1,619
Income from out-licensing agreements	149	101
Income from disposal of products and other	636	340
Total royalty and other operating income	**2,447**	**2,060**

In 2017 income from out-licensing agreements included an upfront payment from the exclusive licence agreement with Dermira for the development and worldwide commercialisation of lebrikizumab for atopic dermatitis and other potential indications. Income from disposal of products included the divestment of the worldwide rights for both Bonviva and Bondronat (both excluding US and Japan), Dilatrend and Kytril (excluding Japan).

In 2016 income from product disposals and other operating income included the product divestment of Xenical.

3. Net financial expense

Financing costs in millions of CHF

	2017	2016
Interest expense	(585)	(688)
Amortisation of debt discount [20]	(13)	(19)
Net gains (losses) on debt derivatives	–	1
Net gains (losses) on redemption and repurchase of bonds and notes [20]	(74)	(142)
Discount unwind [19]	(20)	(65)
Net interest cost of defined benefit plans [25]	(147)	(186)
Total financing costs	**(839)**	**(1,099)**

Other financial income (expense) in millions of CHF

	2017	2016
Net gains (losses) on sale of equity securities	186	162
Net gains (losses) on equity security derivatives	–	–
Dividend income	2	2
Write-downs and impairments of equity securities	(17)	(10)
Net income from equity securities	**171**	**154**
Interest income	30	22
Net gains (losses) on sale of debt securities	3	3
Net interest income and income from debt securities	**33**	**25**
Net foreign exchange gains (losses)	(238)	44
Net gains (losses) on foreign currency derivatives	123	(168)
Foreign exchange gains (losses)	**(115)**	**(124)**
Net other financial income (expense)	(3)	(18)
Associates [22]	(2)	–
Total other financial income (expense)	**84**	**37**

Net financial expense in millions of CHF

	2017	2016
Financing costs	(839)	(1,099)
Other financial income (expense)	84	37
Net financial expense	**(755)**	**(1,062)**
Financial result from Treasury management	(606)	(876)
Financial result from Pension management	(147)	(186)
Associates [22]	(2)	–
Net financial expense	**(755)**	**(1,062)**

4. Income taxes

Income tax expenses in millions of CHF

	2017	2016
Current income taxes	(4,846)	(3,576)
Deferred taxes	1,423	302
Total income tax (expense)	**(3,423)**	**(3,274)**

Since the Group operates internationally, it is subject to income taxes in many different tax jurisdictions. The Group calculates its average expected tax rate as a weighted average of the tax rates in the tax jurisdictions in which the Group operates. This rate changes from year to year due to changes in the mix of the Group's taxable income and changes in local tax rates.

The Group's average expected tax rate decreased to 21.5% in 2017 (2016: 24.7%). The decrease was mainly due to the lower proportion of the Group's profits from the US, which has a relatively higher local tax rate than the Group's average tax rate. The lower proportion of US profits was driven by goodwill impairments in 2017.

The Group's effective tax rate increased to 27.9% in 2017 (2016: 25.2%). The main drivers for the increase were the goodwill impairments mentioned above, which are not tax deductible, the impact from the intra-group transfer of intangible rights in 2016 and the transitional effect of changes in US tax rates.

On 22 December 2017 changes to US tax rates were enacted that will become effective from 1 January 2018. Among the changes is a decrease in the US Federal tax rate from 35% to 21%. The Group has carried out a remeasurement of its deferred tax positions and as a consequence the net deferred tax asset recorded on the balance sheet was reduced by CHF 346 million as of the end of 2017. This resulted in a transitional expense of CHF 116 million in 2017. The remaining adjustments of CHF 230 million were recorded to other comprehensive income, in so far as they relate to temporary differences arising on items that were themselves recorded to other comprehensive income, such as actuarial gains/losses on US pension plans.