B

Consolidated Financial Statements

Bayer Group Consolidated Income Statements

B 1

€ million	Note	2016	2017
Net sales	**[7]**	**34,943**	**35,015**
Cost of goods sold		(11,756)	(11,382)
Gross profit		**23,187**	**23,633**
Selling expenses	[8]	(11,148)	(11,116)
Research and development expenses	[9]	(4,405)	(4,504)
General administration expenses		(1,804)	(2,026)
Other operating income	[10]	787	864
Other operating expenses	[11]	(879)	(948)
EBIT [1]		**5,738**	**5,903**
Equity-method income (loss)	[13.1]	(6)	20
Financial income		149	289
Financial expenses		(1,108)	(1,635)
Financial result	**[13]**	**(965)**	**(1,326)**
Income before income taxes		**4,773**	**4,577**
Income taxes	[14]	(1,017)	(1,329)
Income from continuing operations after income taxes		**3,756**	**3,248**
of which attributable to noncontrolling interest		13	(1)
of which attributable to Bayer AG stockholders		3,743	3,249
Income from discontinued operations after income taxes	**[6.3]**	**1,070**	**4,846**
of which attributable to noncontrolling interest		282	759
of which attributable to Bayer AG stockholders		788	4,087
Income after income taxes		**4,826**	**8,094**
of which attributable to noncontrolling interest	[15]	295	758
of which attributable to Bayer AG stockholders (net income)		**4,531**	**7,336**
€			
Earnings per share	**[16]**		
From continuing operations	**[16]**		
Basic		4.50	3.73
Diluted		4.50	3.73
From discontinued operations	**[16]**		
Basic		0.94	4.68
Diluted		0.94	4.68
From continuing and discontinued operations	**[16]**		
Basic		5.44	8.41
Diluted		5.44	8.41

2016 figures restated
[1] For definition, see Combined Management Report, Chapter 2.4 “Alternative Performance Measures Used by the Bayer Group.”

Bayer Group Consolidated Statements of Comprehensive Income

B 2

€ million	Note	2016	2017
Income after income taxes		**4,826**	**8,094**
of which attributable to noncontrolling interest	[15]	295	758
of which attributable to Bayer AG stockholders		4,531	7,336
Remeasurements of the net defined benefit liability for post-employment benefit plans	[25]	(1,036)	1,236
Income taxes	[14]	228	(515)
Other comprehensive income from remeasurements of the net defined benefit liability for post-employment benefit plans		**(808)**	**721**
Other comprehensive income relating to associates accounted for using the equity method		**–**	**(44)**
Other comprehensive income that will not be reclassified subsequently to profit or loss		**(808)**	**677**
Changes in fair values of derivatives designated as cash flow hedges	[30.3]	58	(144)
Reclassified to profit or loss		3	3
Income taxes	[14]	(16)	53
Other comprehensive income from cash flow hedges		**45**	**(88)**
Changes in fair values of available-for-sale financial assets	[20]	65	(3)
Reclassified to profit or loss		–	(2)
Income taxes	[14]	(8)	3
Other comprehensive income from available-for-sale financial assets		**57**	**(2)**
Changes in exchange differences recognized on translation of operations outside the eurozone		703	(2,152)
Reclassified to profit or loss		(58)	–
Other comprehensive income from exchange differences		**645**	**(2,152)**
Other comprehensive income relating to associates accounted for using the equity method		**(14)**	**101**
Other comprehensive income that may be reclassified subsequently to profit or loss		**733**	**(2,141)**
Total other comprehensive income[1]		**(75)**	**(1,464)**
of which attributable to noncontrolling interest		(10)	(106)
of which attributable to Bayer AG stockholders		(65)	(1,358)
Total comprehensive income		**4,751**	**6,630**
of which attributable to noncontrolling interest		285	652
of which attributable to Bayer AG stockholders		4,466	5,978

[1] Total changes recognized outside profit or loss

Bayer Group Consolidated Statements of Financial Position

B 3

€ million	Note	Dec. 31, 2016	Dec. 31, 2017
Noncurrent assets			
Goodwill	[17]	16,312	14,751
Other intangible assets	[17]	13,567	11,674
Property, plant and equipment	[18]	13,114	7,633
Investments accounted for using the equity method	[19]	584	4,007
Other financial assets	[20]	1,281	1,634
Other receivables	[23]	583	400
Deferred taxes	[14]	6,350	4,915
		51,791	**45,014**
Current assets			
Inventories	[21]	8,408	6,550
Trade accounts receivable	[22]	10,969	8,582
Other financial assets	[20]	6,275	3,529
Other receivables	[23]	2,210	1,276
Claims for income tax refunds		676	474
Cash and cash equivalents		1,899	7,581
Assets held for sale	[6.3]	10	2,081
		30,447	**30,073**
Total assets		**82,238**	**75,087**
Equity	[24]		
Capital stock		2,117	2,117
Capital reserves		9,658	9,658
Other reserves		18,558	25,026
Equity attributable to Bayer AG stockholders		**30,333**	**36,801**
Equity attributable to noncontrolling interest		1,564	60
		31,897	**36,861**
Noncurrent liabilities			
Provisions for pensions and other post-employment benefits	[25]	11,134	8,020
Other provisions	[26]	1,780	1,366
Financial liabilities	[27]	16,180	12,483
Income tax liabilities		423	495
Other liabilities	[29]	957	1,116
Deferred taxes	[14]	1,330	1,153
		31,804	**24,633**
Current liabilities			
Other provisions	[26]	5,421	4,344
Financial liabilities	[27]	3,401	1,935
Trade accounts payable	[28]	6,410	5,129
Income tax liabilities		884	422
Other liabilities	[29]	2,421	1,652
Liabilities directly related to assets held for sale	[6.3]	–	111
		18,537	**13,593**
Total equity and liabilities		**82,238**	**75,087**

Bayer Group Consolidated Statements of Changes in Equity

B 4

€ million	Capital stock	Capital reserves	Retained earnings incl. net income	Exchange differences	Fair-value measurement of securities
Dec. 31, 2015	**2,117**	**6,167**	**16,581**	**(622)**	**24**
Equity transactions with owners					
Capital increase		3,491			
Dividend payments			(2,067)		
Other changes			129	53	
Other comprehensive income			(781)	614	57
Income after income taxes			4,531		
Dec. 31, 2016	**2,117**	**9,658**	**18,393**	**45**	**81**
Equity transactions with owners					
Capital increase					
Dividend payments			(2,233)		
Other changes			2,727		
Other comprehensive income			628	(1,915)	17
Income after income taxes			7,336		
Dec. 31, 2017	**2,117**	**9,658**	**26,851**	**(1,870)**	**98**

B 4 (continued)

€ million	Cash flow hedges	Revaluation surplus	Equity attributable to Bayer AG stockholders	Equity attributable to non-controlling interest	Equity
Dec. 31, 2015	**(23)**	**21**	**24,265**	**1,180**	**25,445**
Equity transactions with owners					
Capital increase			3,491		3,491
Dividend payments			(2,067)	(58)	(2,125)
Other changes		(4)	178	157	335
Other comprehensive income	45		(65)	(10)	(75)
Income after income taxes			4,531	295	4,826
Dec. 31, 2016	**22**	**17**	**30,333**	**1,564**	**31,897**
Equity transactions with owners					
Capital increase					
Dividend payments			(2,233)	(131)	(2,364)
Other changes		(4)	2,723	(2,025)	698
Other comprehensive income	(88)		(1,358)	(106)	(1,464)
Income after income taxes			7,336	758	8,094
Dec. 31, 2017	**(66)**	**13**	**36,801**	**60**	**36,861**

Bayer Group Consolidated Statements of Cash Flows

B 5

€ million	Note	2016	2017
Income from continuing operations after income taxes		3,756	3,248
Income taxes		1,017	1,329
Financial result		965	1,326
Income taxes paid		(1,701)	(1,821)
Depreciation, amortization and impairments		3,063	2,660
Change in pension provisions		(297)	(227)
(Gains) losses on retirements of noncurrent assets		(45)	(133)
Decrease (increase) in inventories		(78)	(293)
Decrease (increase) in trade accounts receivable		(385)	(18)
(Decrease) increase in trade accounts payable		310	265
Changes in other working capital, other noncash items		(170)	275
Net cash provided by (used in) operating activities from continuing operations		**6,435**	**6,611**
Net cash provided by (used in) operating activities from discontinued operations		2,654	1,523
Net cash provided by (used in) operating activities	[33]	**9,089**	**8,134**
Cash outflows for additions to property, plant, equipment and intangible assets		(2,578)	(2,366)
Cash inflows from sales of property, plant, equipment and other assets		111	241
Cash inflows from (outflows for) divestments		(18)	453
Cash outflows for noncurrent financial assets		(690)	(313)
Cash inflows from (outflows for) acquisitions less acquired cash		2	(158)
Interest and dividends received		89	168
Cash inflows from (outflows for) current financial assets		(5,645)	1,543
Net cash provided by (used in) investing activities	[34]	**(8,729)**	**(432)**
Capital contributions		3,300	–
Proceeds from shares of Covestro AG		–	3,717
Dividend payments		(2,126)	(2,364)
Issuances of debt		15,190	10,369
Retirements of debt		(15,920)	(12,848)
Interest paid including interest-rate swaps		(853)	(801)
Interest received from interest-rate swaps		59	69
Cash outflows for the purchase of additional interests in subsidiaries		–	(23)
Net cash provided by (used in) financing activities	[35]	**(350)**	**(1,881)**
Change in cash and cash equivalents due to business activities		**10**	**5,821**
Cash and cash equivalents at beginning of year		**1,859**	**1,899**
Change in cash and cash equivalents due to changes in scope of consolidation		3	–
Change in cash and cash equivalents due to exchange rate movements		27	(139)
Cash and cash equivalents at end of year		**1,899**	**7,581**

2016 figures restated

Notes to the Consolidated Financial Statements of the Bayer Group

1. Key data by segment

B 1/1

Key Data by Segment

	Pharmaceuticals		Consumer Health		Crop Science		Animal Health	
€ million	2016	2017	2016	2017	2016	2017	2016	2017
Net sales (external)	16,420	16,847	6,037	5,862	9,915	9,577	1,523	1,571
Change [1]	+7.3%	+2.6%	−0.6%	−2.9%	−2.1%	−3.4%	+2.2%	+3.2%
Currency-adjusted change [1]	+8.7%	+4.3%	+3.5%	−1.7%	+0.2%	−2.2%	+4.8%	+4.1%
Intersegment sales	29	38	5	14	36	38	10	8
Net sales (total)	16,449	16,885	6,042	5,876	9,951	9,610	1,533	1,579
EBIT [1]	3,389	4,325	695	518	1,755	1,235	313	307
EBIT before special items [1]	3,947	4,665	987	818	1,898	1,643	320	338
EBITDA before special items [1]	5,251	5,711	1,411	1,231	2,421	2,043	349	381
ROCE [1]	16.2%	21.0%	3.5%	2.7%	12.9%	9.6%	63.5%	47.1%
Net cash provided by operating activities	3,368	3,867	874	1,059	2,071	1,884	193	209
Equity-method income (loss)	–	1	2	1	(1)	(1)	–	–
Equity-method carrying amounts [2]	3	3	11	11	15	35	–	–
Assets [2]	22,173	21,753	16,558	14,896	14,868	13,106	838	935
Capital expenditures [2]	851	1,126	220	181	773	670	39	41
Depreciation, amortization and impairments	1,695	1,251	601	627	525	481	30	45
of which impairment losses	464	217	175	213	52	72	1	9
of which impairment loss reversals	–	–	–	–	–	(1)	(1)	–
Research and development expenses	2,787	2,888	259	240	1,164	1,166	140	155

[1] For definition, see Combined Management Report, Chapter 2.4 “Alternative Performance Measures Used by the Bayer Group.”
[2] 2016 Group total including Covestro

B 1/1 continued

Key Data by Segment

	Reconciliation					
	All Other Segments		Corporate Functions and Consolidation		Group	
€ million	2016	2017	2016	2017	2016	2017
Net sales (external)	1,042	1,142	6	16	34,943	35,015
Change [1]	–5.0%	+9.6%	+50.0%	+166.7%	+2.5%	+0.2%
Currency-adjusted change [1]	–4.2%	+10.5%	–	–	+4.7%	+1.6%
Intersegment sales	1,356	2,324	(1,436)	(2,417)	–	–
Net sales (total)	2,398	3,466	(1,430)	(2,401)	34,943	35,015
EBIT [1]	(50)	4	(364)	(486)	5,738	5,903
EBIT before special items [1]	18	115	(344)	(449)	6,826	7,130
EBITDA before special items [1]	224	358	(338)	(436)	9,318	9,288
ROCE [1]	–	–	–	–	10.3%	10.8%
Net cash provided by operating activities	503	256	(574)	(664)	6,435	6,611
Equity-method income (loss)	–	–	(7)	19	(6)	20
Equity-method carrying amounts [2]	–	–	325	3,958	584	4,007
Assets [2]	2,632	2,206	15,986	22,191	82,238	75,087
Capital expenditures [2]	307	359	18	41	2,627	2,418
Depreciation, amortization and impairments	206	243	6	13	3,063	2,660
of which impairment losses	7	2	–	–	699	513
of which impairment loss reversals	–	–	–	–	(1)	(1)
Research and development expenses	39	3	16	52	4,405	4,504

2016 figures restated
[1] For definition, see Combined Management Report, Chapter 2.4 “Alternative Performance Measures Used by the Bayer Group.”
[2] 2016 Group total including Covestro

2. General information

The consolidated financial statements of the Bayer Group as of December 31, 2017, were prepared by Bayer Aktiengesellschaft (Bayer AG) according to the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB), London, United Kingdom, in effect at the end of the reporting period, and the interpretations of the IFRS Interpretations Committee (IFRS IC) as endorsed by the European Union. The applicable further requirements of Section 315e of the German Commercial Code were also taken into account.

Bayer AG (which is entered in the commercial register of the Local Court of Cologne, Germany, HRB 48248) is a global enterprise based in Germany. Its registered office is at Kaiser-Wilhelm-Allee 1, 51368 Leverkusen. Its material business activities in the fields of health care and agriculture took place in the reporting period in the Pharmaceuticals, Consumer Health, Crop Science and Animal Health segments. The activities of each segment are outlined in Note [5].

The declarations required under Section 161 of the German Stock Corporation Act concerning the German Corporate Governance Code have been issued and made available to stockholders.

The Board of Management of Bayer AG prepared the consolidated financial statements of the Bayer Group on February 20, 2018. They were discussed by the Audit Committee of the Supervisory Board of Bayer AG at its meeting on February 26, 2018, and approved by the Supervisory Board at its plenary meeting on February 27, 2018.

In the income statement and statement of comprehensive income, statement of financial position, statement of cash flows and statement of changes in equity, certain items are combined for the sake of clarity. These are explained in the Notes. The income statement is prepared using the cost-of-sales method. Assets and liabilities are classified by maturity. They are regarded as current if they mature within one year or within the normal business cycle of the company or the Group, or are held for sale. The normal business cycle is defined for this purpose as beginning with the procurement of the resources necessary for the production process and ending with the receipt of cash or cash equivalents as consideration for the sale of the goods or services produced in that process. Inventories and trade accounts receivable and payable are always presented as current items. Deferred tax assets and liabilities and pension provisions are always presented as noncurrent items.

The consolidated financial statements of the Bayer Group are drawn up in euros. Amounts are stated in millions of euros (€ million) except where otherwise indicated.

The financial statements of the individual consolidated companies are prepared as of the closing date of the Group financial statements.

3. Effects of new financial reporting standards

Financial reporting standards applied for the first time in 2017

The first-time application of the following amended financial reporting standards had no impact, or no material impact, on the presentation of Bayer's financial position or results of operations, or on earnings per share.

In January 2016, the IASB published amendments to IAS 7 (Statement of Cash Flows) under the title "Amendments to IAS 7: Disclosure Initiative." The following changes in liabilities arising from financing activities must be disclosed: (a) changes from financing cash flows; (b) changes arising from obtaining or losing control of subsidiaries or other businesses; (c) the effect of changes in foreign exchange rates; (d) changes in fair values; (e) other changes.

In January 2016, the IASB also published amendments to IAS 12 (Income Taxes) under the title "Recognition of Deferred Assets for Unrealised Losses." These amendments basically clarify that in the case of assets recognized at fair value (e.g. fixed-rate debt instruments) where the taxable value is the cost of acquisition, unrealized losses result in deductible temporary differences, irrespective of the future use of the asset. Further, when estimating future taxable profits for the purpose of recognizing deferred tax assets, the tax deductions resulting from the reversal of other deductible temporary differences must be eliminated.

In December 2016, the IASB published "Annual Improvements to IFRS Standards 2014 - 2016 Cycle" as part of its annual improvements project. The changes relating to IFRS 12 (Disclosure of Interest in Other Entities) primarily pertain to clarifications.

Published financial reporting standards that have not yet been applied

The IASB and the IFRS Interpretations Committee have issued the following standards, amendments to standards, and interpretations whose application was not yet mandatory for the 2017 fiscal year, or for which the European Union had not yet completed the endorsement process. The application of these standards and amendments is conditional upon their endorsement by the European Union.

IFRS 9 (Financial Instruments) is the new standard for accounting for financial instruments that is to be applied for annual reporting periods beginning on or after January 1, 2018. It was endorsed by the European Union in November 2016.

Bayer will apply IFRS 9 retrospectively, accounting for the aggregate amount of any transition effects by way of an adjustment to equity as of January 1, 2018, and presenting the comparative period in line with previous rules. IFRS 9 introduces new provisions for the classification and measurement of financial assets and replaces the current rules on the impairment of financial assets. The new standard requires a change in accounting methods for the effects resulting from a change in the company's own credit risk for financial liabilities classified at fair value and modifies the requirements for hedge accounting. The classification and measurement of financial liabilities is otherwise largely unchanged from the existing regulations.

Under IFRS 9, the classification and measurement of financial assets is determined by the company’s business model and the characteristics of the cash flows of each financial asset. As at the transition date, these changes in the classification of financial assets will not have any material impact on the presentation of the Group’s financial position and results of operations. In the case of equity instruments held as of January 1, 2018, that are not held for trading, Bayer will uniformly opt to recognize future changes in their fair value through other comprehensive income in the statement of comprehensive income and to continue to classify these as equity upon the derecognition of the financial instrument.

Furthermore, IFRS 9 will lead to an increase in the loss allowance for expected credit losses on financial assets, including trade accounts receivable. Loss allowances for expected credit losses on trade accounts receivable will increase by an amount in the region of approximately €95 million. As at the transition date, the measurement effects for other financial assets will be immaterial.

In the future, changes in the fair values of financial liabilities measured at fair value through profit or loss resulting from Bayer's own credit risk will be recognized through other comprehensive income in the statement of comprehensive income rather than in the income statement. At Bayer, this change principally affects the debt instruments (exchangeable bond) issued in June 2017, which also can be exchanged into Covestro shares. As at the transition date, this change will not have any material effects on these items.

For hedge accounting, Bayer is opting to prospectively apply IFRS 9 from January 1, 2018. If only the intrinsic value of an option is designated as a hedging instrument in a hedging relationship, IFRS 9 requires that changes in the fair value of the time value of the options during the hedging period initially be recognized as other comprehensive income in the statement of comprehensive income. Subsequent measurement depends on the type of hedged transaction. In contrast to the other rules on hedge accounting, the revised accounting method is to be applied retrospectively. As at the transition date, these changes will not have any material impact on the presentation of the Group’s financial position and results of operations.

The IASB issued IFRS 15 (Revenues from Contracts with Customers) in May 2014 and provided clarifications to the standard in April 2016. Both the standard and the clarifications have been endorsed by the European Union. IFRS 15 replaces the current IAS 18 (Revenue) and IAS 11 (Construction Contracts) revenue recognition standards and the related interpretations, and is applicable for annual reporting periods beginning on or after January 1, 2018. The new standard establishes a five-step model related to revenue recognition from contracts with customers. Under IFRS 15, revenue is recognized at amounts that reflect the consideration that an entity expects to be entitled to in exchange for transferring goods or services to a customer. Revenue is recognized when (or as) the entity transfers control of goods or services to a customer either over time or at a point in time. In addition, IFRS 15 clarifies the allocation of individual topics to (new) line items in the statement of financial position and to functional cost items in the income statement, and whether gross or net amounts are to be presented.

Bayer will implement IFRS 15 on the basis of the modified retrospective method, accounting for the aggregate amount of any transition effects by way of an adjustment to retained earnings as of January 1, 2018, and presenting the comparative period in line with previous rules. All of the established business models for the Bayer Group were examined in the course of the implementation project. The previous assessment that the new standard is not expected to materially affect the timing of revenue recognition for the transactions concerned or their components was confirmed. With regard to total Group sales, there are indications of immaterial transition effects specifically due to the different accounting for milestone payments in connection with right-to-access licenses and the recognition of revenues from trademark rights divested in the past. This is likely to result in an immaterial increase in retained earnings on the transition date as explained in greater detail below:

> IFRS 15 requires catch-up adjustments to revenue when milestone payments for right-to-access licenses become unconstrained leading to earlier revenue recognition. This change is expected to result in an increase in retained earnings and a decrease in contract liabilities (currently presented as deferred income in other liabilities) by roughly €100 million on January 1, 2018. This would translate into a decrease of less than 0.1% in annual net sales and less than 0.3% in annual EBIT through 2027 in the Pharmaceuticals segment as measured in relation to the segment's current figures. These effects are presented before deferred taxes.
> IFRS 15 in conjunction with IAS 38 (Intangible Assets) generally requires the recognition of the purchase price related to a brand divestment net of associated carrying amounts in other operating income or expenses upon control transfer. Some cases have been identified where the purchase price was deferred under former policy in line with IAS 18, but would have been recognized in income earlier under IFRS 15, leading to an expected increase in retained earnings and an expected decrease in contract liabilities (currently presented as deferred income in other liabilities) by roughly €30 million on the date of transition. This would translate into a decrease of less than 1.2% and 0.2% in annual net sales and less than 6.2% and 1% in annual EBIT in 2018 and 2019, respectively, for the Animal Health segment as measured in relation to the segment's current figures. For the Pharmaceuticals segment, this would lead to a decrease of less than 0.04% in annual net sales and less than 0.2% in annual EBIT in 2018 as measured in relation to the segment's current figures. These effects are presented before deferred taxes.

At the time these consolidated financial statements were finalized, Bayer had not fully concluded its analysis of the impact IFRS 15 will have on the sale of goods for which it also organizes transportation services. However, preliminary analyses have not revealed any material effects. Line items added to the statement of financial position through IFRS 15, and the corresponding allocation rules, will give rise to presentational changes within the statement of financial position. Overall, based on current knowledge, we do not anticipate any material effects on the results of operations or on earnings per share.

In January 2016, the IASB issued IFRS 16 (Leases), the new standard for lease accounting, which will replace IAS 17. IFRS 16 introduces a uniform lease accounting model for lessees, requiring recognition of a right-of-use asset and a liability for all leases with a term of more than 12 months unless such leases are immaterial. It will eliminate the current requirement for lessees to classify lease contracts as either operating leases – without recognizing the respective assets or liabilities – or as finance leases. As in the previous standard, IAS 17, lessors still have to differentiate between finance and operating leases. Companies in the Bayer Group mainly act as lessees. The application of IFRS 16 is expected to impact Bayer's financial position and results of operations as follows: Instead of the minimum lease payments arising from operating leases currently recognized under other financial commitments, application of IFRS 16 will increase noncurrent assets by requiring the recognition of rights of use. Similarly, financial liabilities will be increased by recognition of the corresponding lease liabilities. In the statement of comprehensive income, the amortization of rights of use and the interest expense for the liabilities will be recognized in place of the expenses for operating leases. In the statement of cash flows, IFRS 16 will probably result in an improvement in the operating cash flow by reducing cash flows for operating activities, while the repayment component of lease payments and the interest expense will be recognized in the financing cash flow. The new standard is to be applied for annual periods beginning on or after January 1, 2019. It was endorsed by the European Union in October 2017. A Group-wide project is steering the implementation of this new standard. Bayer is currently evaluating the quantitative impacts the amendments will have on the presentation of its financial position and results of operations. In this connection, we refer to the other financial commitments from operating leases reported in Note [31].

In June 2016, the IASB published an amendment to IFRS 2 (Share-based Payment) under the title “Classification and Measurement of Share-based Payment Transactions.” This amendment provides guidance on certain accounting issues relating to cash-settled share-based payments. For example, the fair value of the equity instruments is not to be adjusted for service conditions or non-market-based performance conditions. Instead, these are to be taken into account by adjusting the number of equity instruments expected to vest. The amendment is to be applied for annual periods beginning on or after January 1, 2018. It has not yet been endorsed by the European Union. The changes are not expected to have a material impact on the presentation of Bayer’s financial position or results of operations.

In September 2016 the IASB published an amendment to IFRS 4 (Insurance Contracts) under the title “Applying IFRS 9 ‘Financial Instruments’ with IFRS 4 ‘Insurance Contracts’.” These amendments aim to mitigate the impact of the different dates of first-time application of IFRS 9 and IFRS 17, the successor to IFRS 4, especially at companies with extensive insurance business. It introduces two optional approaches which insurers can use provided that certain conditions are fulfilled: the overlay approach and temporary exemption. The amendment is to be applied for annual periods beginning on or after January 1, 2018. It was endorsed by the European Union in November 2017. The changes are not expected to have a material impact on the presentation of Bayer’s financial position or results of operations.

In December 2016, the IASB published an amendment to IAS 40 (Investment Property) under the title “Transfers of Investment Property.” This specifies that a property may only be transferred to or from the investment property classification when there has been an actual change in use and not when there is a mere change of intent concerning the property. The amendment is to be applied for annual periods beginning on or after January 1, 2018. It has not yet been endorsed by the European Union. The changes are not expected to have a material impact on the presentation of Bayer’s financial position or results of operations.

In December 2016, the IASB published “Annual Improvements to IFRS Standards 2014-2016 Cycle” as part of its annual improvements project. The amendments relate to IFRS 1 (First Time Adoption of IFRS), IFRS 12 (Disclosure of Interest in Other Entities) and IAS 28 (Investments in Associates and Joint Ventures). They mainly contain clarifications on the scope of application and other matters. The amendments to IFRS 1 and IAS 28 are to be applied for annual periods beginning on or after January 1, 2018. The amendments were endorsed by the European Union in February 2018. The changes are not expected to have a material impact on the presentation of Bayer’s financial position or results of operations.

In December 2016, the IASB published the IFRIC Interpretation 22 (Foreign Currency Transactions and Advance Consideration) relating to IAS 21 (The Effects of Changes in Foreign Exchange Rates). The Interpretation clarifies that the assets, income and expenses accounted for following a foreign currency transaction are to be translated at the same exchange rate as any related receipts or payments of advance consideration. IFRIC 22 is to be applied for annual periods beginning on or after January 1, 2018. It has not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In May 2017, the IASB published IFRS 17 (Insurance Contracts), which will replace IFRS 4. Its scope comprises insurance contracts, reinsurance contracts and investment contracts with discretionary participation features. IFRS 17 is to be applied for annual periods beginning on or after January 1, 2021. The amendments have not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In June 2017, the IASB published IFRIC Interpretation 23 (Uncertainty over Income Tax Treatments) to clarify uncertainty relating to the accounting treatment of income taxes. IFRIC 23 is to be applied for annual periods beginning on or after January 1, 2019. It has not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In October 2017, the IASB published an amendment to IFRS 9 (Financial Instruments) under the title “Prepayment Features with Negative Compensation.” This addresses the treatment of symmetrical rights to terminate a contract to allow measurement of financial assets at amortized cost or at fair value through comprehensive income. In addition, it contains clarification on the modification of financial liabilities that does not result in derecognition. The amendment to IFRS 9 is to be applied for annual periods beginning on or after January 1, 2019. It has not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In October 2017, the IASB published an amendment to IAS 28 (Investments in Associates and Joint Ventures) under the title “Long-term Interests in Associates and Joint Ventures.” This clarifies that a company is required to apply IFRS 9 (Financial Instruments), including its impairment rules, to long-term interests in associates and joint ventures that, in substance, form part of the net investment in the associate or joint venture and to which the equity method is not applied. The application of IFRS 9 thus takes precedence over IAS 28. The amendment to IAS 28 is to be applied for annual periods beginning on or after January 1, 2019. It has not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In December 2017, the IASB published “Annual Improvements to IFRS Standards 2015-2017 Cycle” as part of its annual improvements project. The amendments relate to IFRS 3 (Business Combinations), IFRS 11 (Joint Arrangements), IAS 12 (Income Taxes) and IAS 23 (Borrowing Costs). They principally comprise clarifications. The amendments are to be applied for annual periods beginning on or after January 1, 2019. Earlier application is permitted. The amendments have not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In February 2018, the IASB published amendments to IAS 19 (Employee Benefits). These amendments relate to how a company accounts for a defined benefit plan when a change – an amendment, curtailment or settlement – takes place, and require a company to remeasure its net defined benefit liability or asset when said change occurs. They also require a company to use the updated acturial assumptions from this remeasurement to determine current service cost and net interest for the remainder of the reporting period after the change to the plan. The amendments also include clarifications regarding the related effects on determining the asset ceiling. The amendments are to be applied for annual reporting periods beginning on or after January 1, 2019. Early application is permissable. They have not yet been endorsed by the European Union. Bayer will evaluate the impact the amendments will have on the presentation of its financial position and results of operations.

4. Basic principles, methods and critical accounting estimates

The financial statements of the consolidated companies are prepared according to uniform accounting policies and measurement principles.

The consolidated financial statements of the Group are based on the principle of the historical cost of acquisition, construction or production, with the exception of the items reflected at fair value, such as for example, financial assets held for trading or available for sale, derivatives, and liabilities for which Bayer has made use of the fair value option.

In preparing the consolidated financial statements, the management has to make certain assumptions and estimates that may substantially impact the presentation of the Group's financial position and / or results of operations.

Such estimates, assumptions or the exercise of discretion mainly relate to the useful life of noncurrent assets, the discounted cash flows used for impairment testing and purchase price allocations, and the recognition of provisions, including those for litigation-related expenses, pensions and other benefits, taxes, environmental compliance and remediation costs, sales allowances, product liability and guarantees. Essential estimates and assumptions that may affect reporting in the various item categories of the financial statements are described in the following sections of this Note. Estimates are based on historical experience and other assumptions that are considered reasonable under given circumstances. They are continually reviewed but may vary from the actual values.

Changes in accounting policies or measurement principles in light of new or revised standards are generally applied in line with the options permitted within the respective standard. Depending on the option that Bayer makes use of, the income statement for the previous year and the opening statement of financial position for that year are adjusted where necessary. For detailed information on standards to be applied for the first time from January 1, 2018, please see Note [3].

Consolidation

The consolidated financial statements include subsidiaries, joint operations, joint ventures and associates.

Subsidiaries are companies over which Bayer AG is currently able to exercise power by virtue of existing rights. Power means the ability to direct the relevant activities that significantly affect a company's profitability. Control is therefore only deemed to exist if Bayer AG is exposed, or has rights, to variable returns from its involvement with a company and has the ability to use its power over that company to affect the amount of that company's returns. The ability to control another company generally derives from Bayer AG's direct or indirect ownership of a majority of the voting rights. In the case of structured entities, however, control is based on contractual agreements. Inclusion of an entity's accounts in the consolidated financial statements begins when the Bayer Group is able to exercise control over the entity and ceases when it is no longer able to do so.

Joint operations and joint ventures are based on joint arrangements. A joint arrangement is deemed to exist if the Bayer Group through a contractual agreement jointly controls activities managed with a third party. Joint control is only deemed to exist if decisions regarding the relevant activities require the unanimous consent of the parties sharing control.

A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. The Bayer Group recognizes the share of assets, liabilities, revenues and expenses relating to its interest in a joint operation in accordance with its rights and obligations.

A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. Joint ventures are accounted for using the equity method.

Associates are companies over which Bayer AG exerts significant influence, generally through an ownership interest between 20% and 50%. They also are accounted for using the equity method. In addition, Bayer AG can generally exert significant influence on companies in which it holds an interest of below 20% when it has representation in that company's supervisory body.

The carrying amount of a company accounted for using the equity method is adjusted annually by the percentage of any change in its equity corresponding to Bayer's percentage interest in the company. Differences arising upon first-time inclusion using the equity method are accounted for according to full-consolidation principles. Bayer's share of changes – recognized in profit or loss – in these companies' equities, impairment losses recognized on goodwill, and gains and losses from the sale of investments accounted for using the equity method, are reflected in equity-method income / loss.

Interests in subsidiaries, joint ventures and associates that do not have a material impact on the Group's financial position or results of operations, either individually or in aggregate, are accounted for at cost of acquisition less any impairment losses.

Foreign currency translation

The financial statements of the individual companies for inclusion in the consolidated financial statements are prepared in their respective functional currencies. A company's functional currency is that of the economic environment in which it primarily generates and expends cash. The majority of consolidated companies carry out their activities autonomously from a financial, economic and organizational point of view, and their functional currencies are therefore the respective local currencies.

In the consolidated financial statements, the assets and liabilities of companies that do not use the euro as their functional currency at the start and end of the year are translated into euros at closing rates. All changes occurring during the year and all income and expense items and cash flows are translated into euros at average monthly rates. Equity components are translated at the historical exchange rates prevailing at the respective dates of their first-time recognition in Group equity.

The exchange differences arising between the resulting amounts and those obtained by translating at closing rates are recognized outside profit or loss as "Exchange differences on translation of operations outside the eurozone" (in other comprehensive income) or presented as "Exchange differences" in the tables in the Notes. When a company is deconsolidated or the net investment in a foreign operation is reduced, such exchange differences are reclassified from equity to profit or loss.

The exchange rates for major currencies against the euro varied as follows:

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Exchange Rates for Major Currencies

		Closing rate		Average rate	
€1/		2016	2017	2016	2017
BRL	Brazil	3.43	3.98	3.84	3.59
CAD	Canada	1.42	1.51	1.47	1.46
CHF	Switzerland	1.07	1.17	1.09	1.11
CNY	China	7.35	7.81	7.36	7.61
GBP	United Kingdom	0.86	0.89	0.82	0.88
JPY	Japan	123.36	135.01	120.06	126.39
MXN	Mexico	21.78	23.66	20.62	21.28
RUB	Russia	64.30	69.41	73.79	65.71
USD	United States	1.05	1.20	1.11	1.13

In 2017, as in prior years, the rules of IAS 29 (Financial Reporting in Hyperinflationary Economies) were relevant for Bayer S.A., Venezuela. Gains and losses incurred upon adjusting the carrying amounts of nonmonetary assets and liabilities and of items in the income statement for inflation are recognized in other operating income and expenses.

Starting in January 2016, foreign currency translation and valuation were switched to the “hyperinflation-adjusted” SIMADI exchange rate. This is determined internally because reliable exchange rates are not available externally. It was initially based on the official SIMADI rate and has subsequently been adjusted in line with published inflation rates. The exchange rate thus calculated was VEF 74,258 to the U.S. dollar at the end of December 2017 (2016: VEF 2,737 to the U.S. dollar). The resulting U.S. dollar amounts were then translated at the dollar / euro closing-date rate.

Receivables from the Venezuelan exchange control authority relating to the allocation of U.S. dollars at a preferential exchange rate are impaired to zero as soon as they are posted.

Foreign currency measurement

In the separate financial statements of the individual consolidated companies, monetary items, such as receivables and liabilities, that are denominated in currencies other than the respective functional currency are measured at closing rates. Related exchange differences are recognized in profit or loss as exchange gains or losses under other financial income or expenses.

Net sales and other operating income

All revenues derived from the selling of products or rendering of services or from licensing agreements are recognized as sales. Other operational revenues are recognized as other operating income. Sales are recognized in profit or loss when the significant risks and rewards of ownership of the goods have been transferred to the customer, the company retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold, the amount of revenue and costs incurred or to be incurred can be measured reliably, and it is sufficiently probable that the economic benefits associated with the transaction will flow to the company.

Sales are stated net of sales taxes, other taxes and sales deductions at the fair value of the consideration received or to be received. Sales deductions are estimated amounts for rebates, cash discounts and product returns. They are deducted at the time the sales are recognized, and appropriate provisions are recorded. Sales deductions are estimated primarily on the basis of historical experience, specific contractual terms and future expectations of sales development. It is unlikely that factors other than these could materially affect sales deductions in the Bayer Group.

Provisions for rebates in 2017 amounted to 6.1% of total net sales (2016: 5.5%). In addition to rebates, Group companies offer cash discounts for prompt payment in some countries. Provisions for cash discounts as of December 31, 2017, and December 31, 2016, were less than 0.1% of total net sales for the respective year.

Sales are reduced by the amount of the provisions for expected returns of defective goods or of saleable products that may be returned under contractual arrangements. The net sales are reduced on the date of sale or on the date when the amount of future product returns can be reasonably estimated. Provisions for product returns in 2017 amounted to 0.6% of total net sales (2016: 0.6%). If future product returns cannot be reasonably estimated and are significant to a sales transaction, the revenues and the related cost of sales are deferred until a reasonable estimate can be made or the right to return the goods has expired.

Some of the Bayer Group's revenues are generated on the basis of licensing agreements under which third parties have been granted rights to products and technologies. Payments received, or expected to be received, that relate to the sale or out-licensing of technologies or technological expertise are recognized in profit or loss as of the effective date of the respective agreement if all rights relating to the technologies and all obligations resulting from them have been relinquished under the contract terms. However, if rights to the technologies continue to exist or obligations resulting from them have yet to be fulfilled, the payments received are deferred accordingly. Upfront payments and similar nonrefundable payments received under these agreements are recorded as other liabilities and recognized in profit or loss according to the degree of performance over the estimated performance period stipulated in the agreement.

License agreements and research and development collaboration agreements may be multiple-deliverable arrangements with varying consideration terms, such as upfront, milestone or similar payments. Such agreements therefore have to be assessed to determine whether the revenues allocated to individual deliverables must be recognized at different points in time and therefore form separate units of account.

To qualify as a separate unit of account for revenue recognition purposes, a deliverable must have value to the licensee on a standalone basis. If this is not the case, the agreement as a whole or a combination of individual deliverables that has value on a standalone basis forms a unit of account.

If necessary goods have yet to be delivered or necessary services provided for a unit of account and such delivery or provision is probable, nonrefundable (royalty) payments already received are recognized through profit or loss over the periods in which these goods are delivered or these services are provided.

Income may also arise from the exchange of intangible assets. The amount recognized is generally based on the fair value of the asset received plus (less) any cash received (dispersed).

Research and development expenses

For accounting purposes, research expenses are defined as costs incurred for current or planned investigations undertaken with the prospect of gaining new scientific or technical knowledge and understanding. Development expenses are defined as costs incurred for the application of research findings or specialist knowledge to plans or designs for the production, provision or development of new or substantially improved products, services or processes, respectively, prior to the commencement of commercial production or use.

Research and development expenses are incurred in the Bayer Group for in-house research and development activities as well as numerous research and development collaborations and alliances with third parties.

Research and development expenses mainly comprise the costs for active ingredient discovery, clinical studies, research and development activities in the areas of application technology and engineering, field trials, regulatory approvals and approval extensions.

Research costs cannot be capitalized. The conditions for capitalization of development costs are closely defined: a key precondition for recognition of an intangible asset is that it is sufficiently certain that the development activity will generate future cash flows that will cover the associated development costs. Since our own development projects are often subject to regulatory approval procedures and other uncertainties, the conditions for the capitalization of costs incurred before receipt of approvals are not normally satisfied.

In the case of research and development collaborations, a distinction is generally made between payments on contract signature, upfront payments, milestone payments and cost reimbursements for work performed. If an intangible asset (such as the right to the use of an active ingredient) is acquired in connection with any of these payment obligations, the respective payment is capitalized even if it is uncertain whether further development work will ultimately lead to the production of a saleable product. Reimbursements of the cost of research or development work are recognized in profit or loss, except where they are required to be capitalized.

Income taxes

Income taxes comprise the taxes levied on taxable income in the individual countries along with changes in deferred tax assets and liabilities that are recognized in profit or loss. The income taxes recognized are reflected at the amounts likely to be payable under the statutory regulations in force, or already enacted in relation to future periods, at the end of the reporting period.

Complex tax regulations may give rise to uncertainties with respect to their interpretation and the amounts and timing of future taxable income. Given the wide range of international business relationships and the long-term nature and complexity of existing contractual agreements, differences arising between the actual results and the assumptions made, or future changes to such assumptions, could necessitate adjustments to tax income and expense in future periods. The Group establishes provisions for taxes, based on reasonable estimates, for liabilities to the tax authorities of the respective countries that are uncertain as to their amount and the probability of their occurrence. The amount of such provisions is based on various factors, such as experience with previous tax audits and differing legal interpretations by the taxable entity and the responsible tax authority.

In compliance with IAS 12 (Income Taxes), deferred taxes are recognized for temporary differences between the carrying amounts of assets and liabilities in the statement of financial position prepared according to IFRS and their tax bases. Deferred taxes are also recognized for consolidation measures and for loss carryforwards, interest carryforwards and tax credits that are likely to be usable.

Deferred tax assets relating to deductible temporary differences, tax credits, loss carryforwards and interest carryforwards are recognized where it is sufficiently probable that taxable income will be available in the future to enable them to be used. Deferred tax liabilities are recognized on temporary differences taxable in the future. Deferred taxes are calculated at the rates which – on the basis of the statutory regulations in force, or already enacted in relation to future periods, as of the closing date – are expected to apply in the individual countries at the time of realization. Deferred tax assets and deferred tax liabilities are offset if they relate to income taxes levied by the same taxation authority and Bayer has a legal right to settle on a net basis. Material effects of changes in tax rates or tax law on deferred tax assets and liabilities are generally accounted for in the period in which the changes are enacted. Such effects are recognized in profit or loss except where they relate to deferred taxes that were recognized outside profit or loss, in which case they are recognized in other comprehensive income or directly in equity.

Deferred and current taxes are recognized in profit or loss unless they relate to items recognized outside profit or loss, in which case they, too, are recognized in other comprehensive income or directly in equity.

The probability that deferred tax assets resulting from temporary differences, loss carryforwards or interest carryforwards can be used in the future is the subject of forecasts by the individual consolidated companies regarding their future earnings situation and other parameters.

Deferred tax liabilities are recognized on planned dividend payments by subsidiaries. Where no dividend payment is planned for the foreseeable future, no deferred tax liability is recognized on the difference between the proportionate net assets according to IFRS and the tax base of the investment in the subsidiary.

Goodwill

In a business combination, goodwill is capitalized at the acquisition date. It is measured at its cost of acquisition, which is the excess of the acquisition price for shares in a company over the acquired net assets. The net assets are the balance of the fair values of the acquired identifiable assets and the assumed liabilities and contingent liabilities.

Goodwill is not amortized, but tested annually for impairment. Details of the annual impairment tests are given under “Procedure used in global impairment testing and its impact.” Once an impairment loss has been recognized on goodwill, it is not reversed in subsequent periods.

Other intangible assets

An “other intangible asset” is an identifiable nonmonetary asset without physical substance, other than goodwill (such as a patent, a trademark or a marketing right). It is capitalized if the future economic benefits attributable to the asset will probably flow to the company and the cost of acquisition or generation of the asset can be reliably measured.

Other intangible assets are recognized at the cost of acquisition or generation. Those with a determinable useful life are amortized accordingly on a straight-line basis over a period of up to 30 years, except where their actual depletion demands a different amortization pattern. Determination of the expected useful lives of such assets and the amortization patterns is based on estimates of the period for which they will generate cash flows. An impairment test is performed if there is an indication of possible impairment.

Other intangible assets with an indefinite life (such as the Bayer Cross trademark) and intangible assets not yet available for use (such as research and development projects) are not amortized, but tested annually for impairment.

Property, plant and equipment

Property, plant and equipment is depreciated by the straight-line method over an asset's useful life, except where depreciation based on actual depletion is more appropriate.

The following depreciation periods are applied throughout the Group:

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Useful Life of Property, Plant and Equipment

Buildings	20 to 50 years
Outdoor infrastructure	10 to 20 years
Storage tanks and pipelines	10 to 20 years
Plant installations	6 to 20 years
Machinery and equipment	6 to 12 years
Furniture and fixtures	4 to 10 years
Vehicles	5 to 8 years
Computer equipment	3 to 5 years
Laboratory and research facilities	3 to 5 years

When assets are sold, closed down or scrapped, the difference between the net proceeds and the net carrying amount of the assets is recognized as a gain or loss in other operating income or expenses, respectively.

Investment property comprises land and buildings not being used for operational or administrative purposes. It is measured using the cost model. The fair value of the investment property reported in the Notes is determined using the discounted cash flow method, comparisons with the current market values of similar properties, or reports from external experts.

Financial assets

Financial assets comprise loans and receivables, acquired equity and debt instruments, cash and cash equivalents, and derivatives with positive fair values.

Regular-way purchases and sales of financial assets are generally posted on the settlement date. Financial assets are initially recognized at fair value plus transaction costs. The transaction costs incurred for the purchase of financial assets held at fair value through profit or loss are expensed immediately.

If there are substantial and objective indications of a decline in the value of loans and receivables, held-to-maturity financial assets or available-for-sale financial assets, an impairment test is performed. Indications of possible impairment include a high probability of insolvency, a significant deterioration in credit standing, a material breach of contract, operating losses reported by a company over several years, a reduction in market value, the financial restructuring of the debtor, or the disappearance of an active market for the asset.

Impairment losses are generally recorded on receivables in the event of insolvency or similar proceedings being launched, financial restructuring at business partners, or the initiation of enforcement measures. Payment history and past-due receivables are also analyzed, with customer-specific facts assessed in each case.

Financial assets are derecognized when contractual rights to receive cash flows from the financial assets expire or the financial assets are transferred together with all material risks and benefits.

Inventories

In accordance with IAS 2 (Inventories), inventories encompass assets consumed in production or in the rendering of services (raw materials and supplies), assets in the production process for sale (work in process), goods held for sale in the ordinary course of business (finished goods and goods purchased for resale), and advance payments on inventories. Inventories are recognized at their cost of acquisition or production (production-related full costs) – calculated by the weighted-average method – or at their net realizable value, whichever is lower. The net realizable value is the estimated selling price in the ordinary course of business less estimated cost to complete and selling expenses.

Cash and cash equivalents

Cash and cash equivalents comprise cash, checks received and balances with banks and companies. Cash equivalents are highly liquid short-term financial investments that are subject to an insignificant risk of changes in value, are easily convertible into a known amount of cash and have a maturity of three months or less from the date of acquisition or investment.

Provisions for pensions and other post-employment benefits

Within the Bayer Group, post-employment benefits are provided under defined contribution and / or defined benefit plans. In the case of defined contribution plans, the company pays contributions to publicly or privately administered pension plans on a mandatory, contractual or voluntary basis. Once the contributions have been paid, the company has no further payment obligations. The regular contributions constitute expenses for the year in which they are due and as such are included in the functional cost items, and thus in EBIT. All other post-employment benefit systems are defined benefit plans, which may be either unfunded, i.e. financed by provisions, or funded, i.e. financed through pension funds.

The present value of provisions for defined benefit plans and the resulting expense are calculated in accordance with IAS 19 (Employee Benefits) by the projected unit credit method. The future benefit obligations are valued by actuarial methods and spread over the entire employment period on the basis of specific assumptions regarding beneficiary structure and the economic environment. These relate mainly to the discount rate, future salary and pension increases, variations in health care costs, and mortality rates.

The discount rates used are calculated from the yields of high-quality corporate bond portfolios in specific currencies with cash flows approximately equivalent to the expected disbursements from the pension plans. The uniform discount rate derived from this interest-rate structure is thus based on the yields, at the closing date, of a portfolio of AA-rated corporate bonds whose weighted residual maturities approximately correspond to the duration necessary to cover the entire benefit obligation.

The fair value of plan assets is deducted from the present value of the defined benefit obligation for pensions and other post-employment benefits to determine the net defined benefit liability. The obligations and plan assets are valued at regular intervals of not more than three years. Comprehensive actuarial valuations for all major plans are performed annually as of December 31. Plan assets in excess of the benefit obligation are reflected in other receivables, subject to the asset ceiling specified in IAS 19 (Employee Benefits).

The balance of all income and expenses relating to defined benefit plans, except the net interest on the net liability, is recognized in EBIT. The net interest is reflected in the financial result under other financial income and expenses.

The effects of remeasurements of the net defined benefit liability are reflected in the statement of comprehensive income as other comprehensive income. They consist of actuarial gains and losses, the return on plan assets and changes in the effects of the asset ceiling, less the respective amounts included in net interest. Deferred taxes relating to the effects of remeasurements are also recognized in other comprehensive income.

Other provisions

Other provisions are recognized for present legal and constructive obligations arising from past events that will probably give rise to a future outflow of resources, provided that a reliable estimate can be made of the amount of the obligations.

If the projected obligation declines as a result of a change in the estimate, the provision is reversed by the corresponding amount and the resulting income recognized in the operating expense item(s) in which the original charge was recognized.

To enhance the information content of the estimates, certain provisions that could have a material effect on the financial position or results of operations of the Group are tested for their sensitivity to changes in the underlying parameters. To reflect uncertainty about the likelihood of the assumed events actually occurring, the impact of a five-percentage-point change in the probability of occurrence is examined in each case. This analysis has not shown other provisions to be materially sensitive.

Provisions for environmental protection are recorded if future cash outflows are likely to be necessary to ensure compliance with environmental regulations or to carry out remediation work, such costs can be reliably estimated and no future benefits are expected from such measures. Provisions for environmental protection mainly relate to the rehabilitation of contaminated land, recultivation of landfills, and redevelopment and water protection measures.

Estimating the future costs of environmental protection and remediation involves many uncertainties, particularly with regard to the status of laws, regulations and the information available about conditions in the various countries and at the individual sites. Significant factors in estimating the costs include previous experiences in similar cases, conclusions drawn from expert opinions obtained regarding the Group’s environmental programs, current costs and new developments affecting costs, management’s interpretation of current environmental laws and regulations, the number and financial position of third parties that may become obligated to participate in any remediation costs on the basis of joint liability, and the remediation methods likely to be deployed. Changes in these assumptions could impact future reported results of the Group.

Taking into consideration experience gained to date regarding environmental matters of a similar nature, provisions are believed to be adequate based upon currently available information. Given the difficulties inherent in estimating environmental liabilities in the businesses in which the Group operates, especially those for which the risk of environmental damage is greater in relative terms (Crop Science), it remains possible that material additional costs will be incurred beyond the amounts accrued. It may transpire during remediation work that additional expenditures are necessary over an extended period and that these exceed existing provisions and cannot be reasonably estimated.

Provisions for restructuring only cover expenses that arise directly from restructuring measures, are necessary for restructuring and are not related to future business operations. Such expenses include severance payments to employees and compensation payments in respect of rented property that can no longer be used.

Restructuring measures may include the sale or termination of business units, site closures, relocations of business activities or fundamental reorganizations of business units.

Trade-related provisions are recorded mainly for the granting of rebates or discounts, product returns, obligations in respect of services already received but not yet invoiced, and impending losses or onerous contracts.

As a global enterprise with a diverse business portfolio, the Bayer Group is exposed to numerous legal risks for which **provisions for litigations** must be established under certain conditions – particularly in the areas of product liability, competition and antitrust law, patent disputes, tax law and environmental protection.

Litigations and other judicial proceedings often raise complex issues and are subject to many uncertainties and complexities including, but not limited to, the facts and circumstances of each particular case, the jurisdiction in which each suit is brought and differences in applicable law. The outcomes of currently pending and future proceedings generally cannot be predicted. It is particularly difficult to assess the likely outcomes of class actions for damages or mass compensation claims in the United States, which may give rise to significant financial risks for the Bayer Group. As a result of a judgment in court proceedings, regulatory decisions or the conclusion of a settlement, the Bayer Group may incur charges for which no accounting measures have yet been taken for lack of reasonable estimability or which exceed presently established provisions and the insurance coverage.

The Bayer Group considers the need for accounting measures in respect of pending or future litigations, and the extent of any such measures, on the basis of the information available to its legal department and in close consultation with legal counsel acting for the Bayer Group.

Where it is more likely than not that such a litigation will result in an outflow of resources that is already reasonably estimable, a provision for litigation is recorded in the amount of the present value of the expected cash outflows. Such provisions cover the estimated payments to the plaintiffs, court and procedural costs, attorney costs and the cost of potential settlements.

It is frequently impossible to reliably determine the existence of a present obligation or reasonably estimate the probability that a potential outflow of resources will result from a pending or future litigation. The status of the material “legal risks” is described in Note [32]. Due to the special nature of these litigations, provisions generally are not established until initial settlements allow an estimate of potential amounts or judgments have been issued. Provisions for legal defense costs are established if it is probable that material costs will have to be incurred for external legal counsel to defend the company’s legal position.

Internal and external legal counsel evaluate the current status of the Bayer Group's material legal risks at the end of each reporting period. The need to establish or adjust a provision and the amount of the provision or adjustment are determined on this basis. Adjusting events are reflected up to the date of preparation of the consolidated financial statements. The measurement of provisions in the case of class actions or mass compensation claims is mainly based on any settlements reached during the past year and on pending or anticipated future claims.

Provisions for personnel commitments mainly include those for variable one-time payments under short-term incentive programs and for stock-based compensation. Also reflected here are commitments for service awards, early retirements and pre-retirement part-time working arrangements. Provisions for severance payments resulting from restructuring are reflected in provisions for restructuring.

Miscellaneous provisions include those for other liabilities, contingent liabilities from business combinations, and asset retirement obligations (other than those included in provisions for environmental protection).

Financial liabilities

Financial liabilities comprise financial liabilities, trade accounts payable and other liabilities that are settled in cash and cash equivalents or other financial instruments, as well as negative fair values of derivatives.

Financial liabilities are measured at amortized cost unless they are carried at fair value. Examples include derivatives with negative fair values or liabilities for which the fair value option has been used.

Liabilities for contingent consideration arising from business combinations are measured at fair value. Changes in fair value are recognized through profit or loss as of the respective closing date.

Financial liabilities are derecognized when the contractual obligation is discharged or canceled, or has expired.

Mandatory convertible notes are assessed to determine whether they should be accounted for entirely as debt or split into an equity component and a debt component. This involves examining whether Bayer's early conversion rights have economic substance. These rights may have economic substance with respect to maintaining the current credit rating if early conversion can prevent a rating downgrade. In this event, future savings of credit interest would more than offset the cost of early conversion by Bayer. If the right to early conversion is deemed to have economic substance, components of the mandatory convertible notes are classified as equity.

The mandatory convertible notes issued are accounted for as a hybrid financial instrument. The directly attributable costs along with the debt component, which corresponds to the present value of the future interest payments, are deducted from the proceeds of the issue. The debt component is included in financial liabilities. The remaining amount is the equity component, which is reflected in capital reserves.

The fair value option under IAS 39.11A may be used if a bond represents a hybrid financial instrument, i.e. if the nonderivative host contract constitutes a debt instrument, multiple derivatives are embedded in the bond and at least one of the derivatives has to be separated from the host contract and significantly modifies the contractual cash flows.Such a bond is designated in its entirety as a financial liability at fair value through profit or loss. Changes in its fair value are recognized in other financial income and expenses. Use was made of this fair value option for the first time for the debt instruments issued in June 2017 (exchangeable bond 2017 / 2020), which are exchangeable into Covestro shares.

Other receivables and liabilities

Accrued items and other nonfinancial assets and liabilities are carried at amortized cost. They are amortized to income by the straight-line method or according to performance of the underlying transaction.

Grants and subsidies from third parties that serve to promote investment are reflected in the statement of financial position under other liabilities and amortized to income over the useful lives of the respective investments or in line with the terms of the grant or subsidy.

Derivatives

The Bayer Group uses derivatives to mitigate the risk of changes in exchange rates, interest rates or prices and to hedge stock-based compensation programs. The instruments used include forward exchange contracts, interest-rate swaps and stock options. Derivatives are recognized at the trade date.

Contracts concluded in order to receive or deliver nonfinancial items for the company's own purposes are not accounted for as derivatives but treated as pending transactions. Where embedded derivatives are identified that are required to be separated from the pending transactions, they are accounted for separately. To take advantage of market opportunities or cover possible peak demand, a nonmaterial volume of transactions may be entered into for which the possibility of immediate resale cannot be excluded. Such transactions are allocated to separate portfolios upon acquisition and accounted for as derivatives according to IAS 39.

Derivatives are carried at fair value. Positive fair values at the end of the reporting period are reflected in financial assets, negative fair values in financial liabilities. Changes in the fair values of these derivatives are recognized directly in profit or loss except where hedge accounting is used.

Changes in the fair values of the effective portion of derivatives designated as cash flow hedges are initially recognized outside profit or loss in accumulated other comprehensive income. They are reclassified to profit or loss when the underlying transaction is realized. If such a derivative is sold or ceases to qualify for hedge accounting, the change in its value continues to be recognized in accumulated other comprehensive income until the forecasted transaction is realized. If the forecasted transaction is no longer expected to occur, the amount previously recognized in accumulated other comprehensive income is reclassified to profit or loss. The ineffective portion of gains or losses on derivatives designated as cash flow hedges is recognized either in other operating income or expenses or in the financial result, depending on the type of underlying transaction.

Changes in the fair values of derivatives designated as fair-value hedges and the adjustments in the carrying amounts of the underlying transactions are recognized in profit or loss.

Changes in the fair values of forward exchange contracts and currency options serving as hedges of items in the statement of financial position are reflected in other financial income and expenses as exchange gains or losses, while changes in the values of interest-rate swaps and interest-rate options are recognized in interest income or expense. Changes in the fair values of commodity futures and options, and of forward exchange contracts used to hedge forecasted sales transactions in foreign currencies, are recognized in other operating income or expenses. Changes in the fair values of stock options or forward stock transactions used to hedge stock-based employee compensation are initially recognized outside profit or loss and subsequently reclassified to profit or loss in the functional costs over the periods of the Aspire programs.

The income and expense reflected in the financial result pertaining to the derivatives and the underlying transactions are shown separately. Income and expense are not offset.

Acquisition accounting

Acquired businesses are accounted for using the acquisition method, which requires that the assets acquired and liabilities assumed be recorded at their respective fair values on the date Bayer obtains control. Ancillary acquisition costs are recognized as expenses in the periods in which they occur.

The application of the acquisition method requires certain estimates and assumptions to be made, especially concerning the fair values of the acquired intangible assets, property, plant and equipment and the liabilities assumed at the acquisition date, and the useful lives of the acquired intangible assets, property, plant and equipment.

Measurement is based to a large extent on anticipated cash flows. If actual cash flows vary from those used in calculating fair values, this may materially affect the Group's future results of operations. In particular, the estimation of discounted cash flows from intangible assets under development, patented and non-patented technologies and brands is based on assumptions concerning, for example:

> The outcomes of research and development activities regarding the efficacy of a crop protection or seed product, compound, results of clinical trials
> The probability of obtaining regulatory approvals in individual countries
> Long-term sales projections
> Possible selling price erosion due to offerings of unpatented products following patent expirations
> The behavior of competitors (launch of competing products, marketing initiatives, etc.)

For significant acquisitions, the purchase price allocation is carried out with assistance from independent third-party valuation specialists. The valuations are based on the information available at the acquisition date.

In step acquisitions, the fair values of the acquired entity's assets and liabilities are measured in accordance with IFRS 3 (Business Combinations) at the date on which control is obtained. Any resulting adjustments to the fair value of the existing interest are recognized in profit or loss. The carrying amount of the assets and liabilities already recognized in the statement of financial position is then adjusted accordingly.

Divestment accounting

Divestments of shares in subsidiaries that result in a loss of control are generally accounted for in profit or loss. When shares in a subsidiary are gradually divested in several tranches, a reduction in the majority shareholding without the loss of control is reflected outside profit or loss and results in an increase in the equity attributable to noncontrolling stockholders.

After the loss of control, the interest remaining at the time of the loss of control is carried at fair value. If Bayer AG still retains significant influence after divesting shares, the remaining interest is recognized as an interest in an associate and is accounted for using the equity method. If Bayer can no longer exert significant influence on the company, the remaining interest is immediately classified as an available-for-sale financial asset and recognized at fair value outside profit or loss.

Procedure used in global impairment testing and its impact

Impairment tests are performed not only on individual items of intangible assets, property, plant and equipment, but also at the level of cash-generating units or groups of cash-generating units. A cash-generating unit is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The Bayer Group regards its strategic business entities or groups of strategic business entities, as well as certain product families, as cash-generating units and subjects them to global impairment testing. The strategic business entities constitute the second financial reporting level below the segments.

Cash-generating units and unit groups are globally tested if there is an indication of possible impairment. Those to which goodwill is allocated are tested at least annually.

Impairment testing involves comparing the carrying amount of each cash-generating unit, unit group or item of intangible assets, property, plant or equipment to the recoverable amount, which is the higher of its fair value less costs of disposal or value in use. If the carrying amount exceeds the recoverable amount, an impairment loss must be recognized for the difference. In this case an impairment loss is first recognized on any goodwill allocated to the cash-generating unit or unit group. Any remaining part of the impairment loss is then allocated among the other noncurrent nonfinancial assets of the cash-generating unit or unit group in proportion to their carrying amounts. The resulting expense is reflected in the functional item of the income statement in which the depreciation or amortization of the respective assets is recognized. The same applies to income from impairment loss reversals.

The recoverable amount is generally determined on the basis of the fair value less costs of disposal, taking into account the present value of the future net cash flows as market prices for the individual units are not normally available. These are forecasted on the basis of the Bayer Group's current planning, the planning horizon normally being three to five years. Forecasting involves making assumptions, especially regarding future selling prices, sales volumes, costs, market growth rates, economic cycles and exchange rates. These assumptions are based on internal estimates along with external market studies. Where the recoverable amount is the fair value less costs of disposal, the cash-generating unit or unit group is measured from the viewpoint of an independent market participant. Where the recoverable amount is the value in use, the cash-generating unit, unit group or individual asset is measured as currently used. In either case, net cash flows beyond the planning period are determined on the basis of long-term business expectations using the respective individual growth rates derived from market information. The fair value less costs of disposal is determined on the basis of unobservable inputs (Level 3).

The net cash inflows are discounted at a rate equivalent to the weighted average cost of equity and debt capital. To allow for the different risk and return profiles of the Bayer Group's principal businesses, the after-tax cost of capital is calculated separately for each reporting segment, and a segment-specific capital structure is defined by benchmarking against comparable companies in the same industry sector. The cost of equity corresponds to the return expected by stockholders, while the cost of debt is based on the conditions on which comparable companies can obtain long-term financing. Both components are derived from capital market information.

The growth rates applied for impairment testing in 2017 and 2016 and the capital cost factors used to discount the expected cash flows are shown in the following table:

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Impairment Testing Parameters

	Growth rate		After-tax cost of capital	
%	2016	2017	2016	2017
Pharmaceuticals	0.0	0.0	5.5	5.6
Consumer Health	0.0	1.0	5.2	4.8
Crop Protection	2.1	2.0	5.3	5.4
Seeds	1.7	2.0	5.3	5.4
Environmental Science	2.4	2.0	5.3	5.4
Animal Health	0.0	1.0	5.3	5.0

No impairment losses were recognized on goodwill on the basis of the global annual impairment testing of the cash-generating units and unit groups in 2017 or 2016. Impairment losses on intangible assets, property, plant and equipment – net of €13 million (2016: €1 million) in impairment loss reversals – totaled €506 million (2016: €711 million). Details are provided in Notes [17] and [18].

Although the estimates of the useful lives of certain assets, assumptions concerning the macroeconomic environment and developments in the industries in which the Bayer Group operates, and estimates of the discounted future cash flows are believed to be appropriate, changes in assumptions or circumstances could require changes in the analysis. This could lead to the recognition of additional impairment losses in the future or – except in the case of goodwill – to reversals of previously recognized impairment losses if developments are contrary to expectations.

The sensitivity analysis for cash-generating units and unit groups to which goodwill is allocated was based on a 10% reduction in future cash flows, a 10% increase in the weighted average cost of capital or a one-percentage-point reduction in the long-term growth rate. Bayer concluded that no impairment loss would need to be recognized on goodwill in any cash-generating unit or unit group under these conditions.

5. Segment reporting

At Bayer, the Board of Management – as the chief operating decision-maker – allocates resources to the operating segments and assesses their performance. The reportable segments and regions are identified, and the disclosures selected, in line with the internal financial reporting system (management approach) and based on the Group accounting policies outlined in Note [4].

The Bayer Group lost control of the Covestro Group at the end of the third quarter of 2017 and deconsolidated Covestro. As of December 31, 2017, there are four reportable segments: Pharmaceuticals, Consumer Health, Crop Science and Animal Health. Therefore, total figures for the four Life Science segments are no longer presented separately.

The segments' activities are as follows:

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Activities of the Segments

Segment	Activities
Pharmaceuticals	Development, production and marketing of prescription products, especially for cardiology and women's healthcare; specialty therapeutics in the areas of oncology, hematology and ophthalmology; diagnostic imaging equipment and the necessary contrast agents
Consumer Health	Development, production and marketing of mainly nonprescription (OTC = over-the-counter) products in the dermatology, dietary supplement, analgesic, gastrointestinal, cold, allergy, sinus and flu, foot care and sun protection categories
Crop Science	Development, production and marketing of a broad portfolio of products in seeds and plant traits, crop protection and nonagricultural pest control
Animal Health	Development, production and marketing of prescription and nonprescription veterinary products

In the Crop Science segment, the Crop Protection / Seeds and Environmental Science operating segments were combined, mainly in light of the comparable nature of their products for the agricultural industry, such as in the area of crop protection and the related comparable production processes and comparable distribution methods, including via wholesalers in particular.

Business activities that cannot be allocated to any other segment are reported under "All Other Segments." These primarily include the services provided by the service areas: Business Services and Currenta.

The items in "Corporate Functions and Consolidation" mainly comprise the Bayer holding companies and and Leaps by Bayer (formerly the Bayer Lifescience Center), which focuses on the development of crucial, cross-species innovations. They also include the increase or decrease in expenses for Group-wide long-term stock-based compensation arising from fluctuations in the performance of Bayer stock, and the consolidation of intersegment sales (2017: €2.4 billion; 2016: €1.4 billion).

The segment data are calculated as follows:

- Table B 1/1 "Key Data by Segment" and the present chapter contain supplementary performance indicators that are not subject to requirements of the financial reporting standards governing the preparation of the Combined Management Report and the consolidated financial statements. The most important of these indicators are EBIT, EBITDA, EBIT before special items, EBITDA before special items, and the return on capital employed (ROCE). These supplementary indicators are defined, and their calculation explained, in Chapter 2.4 "Alternative Performance Measures Used by the Bayer Group" of the Combined Management Report in the Bayer Annual Report 2017.
- The intersegment sales reflect intra-Group transactions effected at transfer prices fixed on an arm's-length basis.
- The net cash provided by operating activities is the cash flow from operating activities as defined in IAS 7 (Statement of Cash Flows).
- The segment assets comprise all assets serving the respective segment, stated as of December 31, including material participating interests of direct relevance to business operations.
- The equity items reflect the earnings and carrying amounts of investments accounted for using the equity method.

Reconciliations

The reconciliations of EBITDA before special items, EBIT before special items and EBIT to Group income before income taxes and of the segments' assets to Group assets are given in the following tables:

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Reconciliation of Segments' EBITDA Before Special Items to Group Income Before Income Taxes

€ million	2016	2017
EBITDA before special items of segments	9,656	9,724
EBITDA before special items of Corporate Functions and Consolidation	(338)	(436)
EBITDA before special items [1]	**9,318**	**9,288**
Depreciation, amortization and impairment losses / loss reversals before special items of segments	(2,486)	(2,145)
Depreciation, amortization and impairment losses / loss reversals before special items of Corporate Functions and Consolidation	(6)	(13)
Depreciation, amortization and impairment losses / loss reversals before special items	**(2,492)**	**(2,158)**
EBIT before special items of segments	7,170	7,579
EBIT before special items of Corporate Functions and Consolidation	(344)	(449)
EBIT before special items [1]	**6,826**	**7,130**
Special items of segments	(1,068)	(1,190)
Special items of Corporate Functions and Consolidation	(20)	(37)
Special items [1]	**(1,088)**	**(1,227)**
EBIT of segments	6,102	6,389
EBIT of Corporate Functions and Consolidation	(364)	(486)
EBIT [1]	**5,738**	**5,903**
Financial result	(965)	(1,326)
Income before income taxes	**4,773**	**4,577**

2016 figures restated
[1] For definition, see Combined Management Report, Chapter 2.4 "Alternative Performance Measures Used by the Bayer Group."

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Reconciliation of Segments' Assets to Group Assets

€ million	2016	2017
Assets of the operating segments	**66,252**	**52,896**
Corporate Functions and Consolidation assets	507	4,207
Nonallocated assets	15,479	17,984
Group assets	**82,238**	**75,087**

Prior-year figures include Covestro

The reconciliation of the segments' sales to Group sales is apparent from the table of key data by segment in Note [1].

Information on geographical areas

The following table provides a regional breakdown of external sales by market and of intangible assets, property, plant and equipment:

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Information on Geographical Areas

	Net sales (external) – by market		Intangible assets and property, plant and equipment	
€ million	2016	2017	2016	2017
Europe / Middle East / Africa	**13,062**	**13,388**	**23,438**	**21,356**
of which Germany	3,329	3,392	12,468	10,856
of which Switzerland	510	485	5,047	5,190
North America	**10,066**	**10,143**	**14,693**	**10,354**
of which United States	8,706	8,561	14,297	10,056
Asia / Pacific	**7,413**	**7,637**	**4,116**	**1,771**
of which China	2,441	2,594	2,938	853
Latin America	**4,402**	**3,847**	**746**	**577**
of which Brazil	2,173	1,647	340	209
Total	**34,943**	**35,015**	**42,993**	**34,058**

2016 figures restated

Information on major customers

Revenues from transactions with a single customer in no case exceeded 10% of Bayer Group sales in 2017 or 2016.

6. Scope of consolidation; subsidiaries and affiliates

6.1 Changes in the scope of consolidation

Changes in the scope of consolidation in 2017 were as follows:

B 6.1/1

Change in Number of Consolidated Companies

Bayer AG and consolidated companies	Germany	Other countries	Total
December 31, 2016	64	237	301
Changes in scope of consolidation	(9)	(39)	(48)
Retirements	(5)	(11)	(16)
December 31, 2017	50	187	237

The decrease in the total number of consolidated companies in 2017 was primarily due to the deconsolidation of Covestro. Covestro AG has since been accounted for as an associate in the consolidated financial statements.

In conjunction with the acquisition of the consumer care business of Merck & Co., Inc., United States, Bayer entered into a strategic collaboration with that company in 2014. This collaboration is included in the consolidated financial statements as a joint operation. Bayer and Merck & Co., Inc., have mutually agreed to collaborate on the development, production, life-cycle management and marketing of active ingredients and products in the field of soluble guanylate cyclase (sGC) modulation. GRI G4-17

Four (2016: five) associates and eight (2016: six) joint ventures were accounted for in the consolidated financial statements using the equity method. Details of these companies are given in Note [19].

Flagship Ventures V Agricultural Fund, L.P., United States, was included in the consolidated financial statements for the first time in 2015 and classified as an associate. Bayer has no control over this associate despite owning 99.9% of the capital, but is able to significantly influence its financial and operating policy decisions.

Bayer Trendlines Ag Innovation Fund, Limited Partnership, Israel, was included in the consolidated financial statements for the first time in 2016 and classified as an associate. Bayer is a limited partner and has no control over this entity due to contractual restrictions, despite owning 100% of the capital.

Nanjing Baijingyu Pharmaceutical Co., Ltd., China, was classified as an associate in view of Bayer's representation on its executive committee and supervisory board. This enables Bayer to significantly influence its financial and operating policy decisions despite owning only 15% of its voting rights and capital.

A total of 76 (2016: 72) subsidiaries, including one (2016: one) structured entities and 12 (2016: 12) associates or joint ventures that in aggregate are immaterial to the Bayer Group's financial position and results of operations are neither consolidated nor accounted for using the equity method, but are recognized at cost. The immaterial subsidiaries accounted for less than 0.1% of Group sales, less than 0.2% of equity and less than 0.1% of total assets.

Details of the companies included in the consolidated financial statements, the subsidiary and affiliated companies of the Bayer Group pursuant to Section 313, Paragraph 2 of the German Commercial Code, and a list of domestic subsidiaries that availed themselves in 2017 of certain exemptions granted under Section 264, Paragraph 3, and Section 264b of the German Commercial Code, are included in the audited consolidated financial statements that have been submitted for publication in the electronic version of the Federal Gazette. This information can also be accessed at **www.bayer.com/owner17**.

6.2 Business combinations and other acquisitions

Business combinations and other acquisitions in 2017

The purchase price of the acquisition made in 2017 was €158 million (2016: minus €5 million). The purchase price of the acquired businesses was settled mainly in cash. Goodwill amounted to €51 million (2016: €9 million). It resulted from the following transaction:

On January 3, 2017, Bayer Animal Health acquired the Cydectin™ portfolio in the United States from Boehringer Ingelheim Vetmedica, Inc., St. Joseph, Missouri, United States. The acquisition comprises the CYDECTIN Pour-On, CYDECTIN Injectable and CYDECTIN Oral Drench endectocides for cattle and sheep. The acquisition is intended to strengthen the antiparasitics portfolio in the United States through the addition of endectocides. A purchase price of €158 million was agreed. The purchase price pertained mainly to trademarks and goodwill, which, as expected, is fully tax-deductible.

The effects of this transaction – as of the acquisition date – on the Group's assets and liabilities in 2017 are shown in the following table. The transaction resulted in the following cash outflow:

B 6.2/1

Acquired Assets and Assumed Liabilities (Fair Values at the Respective Acquisition Dates)

€ million	2016	2017
Goodwill	9	51
Patents and technologies	1	–
Trademarks	–	85
Production rights	–	4
R&D projects	(24)	–
Inventories	–	18
Provisions for pensions and other post-employment benefits	1	–
Deferred tax liabilities	8	–
Net assets	**(5)**	**158**
Purchase price	**(5)**	**158**
Net cash (inflow) outflow for acquisitions	**(5)**	**158**

In fiscal 2017, the Cydectin™ business contributed €31 million to the sales of the Bayer Group. After-tax income of €5 million was recorded for the Cydectin™ business from the date of first-time consolidation. This includes the financing costs incurred since the acquisition date.

On September 13, 2017, Bayer and Gingko Bioworks, Inc., Boston, Massachusetts, United States, founded the joint venture Cooksonia Opco LLC, Boston, Massachusetts, United States. The joint venture will focus on technologies to improve plant-associated microbes with a major focus on nitrogen fixation, which is important in agriculture. Capital contribution liabilities of US$70 million to Cooksonia Opco LLC were recognized in the statement of financial position as of December 31, 2017. These liabilities mature on December 31, 2024, at the latest. US$10 million was contributed in 2017.

Planned acquisitions

On September 14, 2016, Bayer signed a definitive merger agreement with Monsanto Company, St. Louis, Missouri, United States, which provides for Bayer's acquisition of all outstanding shares in Monsanto Company against a cash payment of US$128 per share. At the time this corresponded to an expected transaction volume of approximately US$66 billion, comprising an equity value (purchase price) of approximately US$56 billion and net debt to be assumed in an amount of US$10 billion, which includes pension obligations as of May 31, 2016, as well as liabilities for payments under stock-based compensation programs. Based on Monsanto's interim report as at November 30, 2017, the transaction value currently amounts to US$62 billion. Bayer thus has a contingent financial commitment in the amount of approximately US$56 billion to acquire Monsanto's entire outstanding capital stock. The planned transaction has been partially hedged against the euro / U.S. dollar currency risk using derivatives contracts.

The transaction brings together two different, but highly complementary businesses. Monsanto is a leading global provider of agricultural products, including seeds and seed technologies, herbicides, and digital platforms to give farmers agronomic recommendations. The combined business will offer a comprehensive portfolio of seed and crop protection products for a broad range of crops and indications, along with supporting digital farming applications. The combination also brings together both companies' leading innovation capabilities and R&D technology platforms.

Syndicated bank financing of US$56.9 billion was committed by Bank of America Merrill Lynch, Credit Suisse, Goldman Sachs, HSBC and JP Morgan upon the signing of the merger agreement. The credit facility was subsequently syndicated to more than 20 other partner banks of Bayer. Further refinancing of the purchase price is to be achieved through a capital increase, the issuance of bonds and existing liquidity. In November 2016, Bayer successfully placed mandatory convertible notes with a nominal value of €4 billion. The credit facility was reduced by the net proceeds from the mandatory convertible notes in 2016 and by the net proceeds from an exchangeable bond in June 2017. As of December 31, 2017, the credit facility amounts to US$51.5 billion.

The stockholders of Monsanto Company approved the merger with the requisite majority on December 13, 2016. The transaction remains subject to customary closing conditions, including relevant antitrust and other regulatory approvals. With the support of Monsanto, Bayer has initiated the process of obtaining the required regulatory approvals. In 2017, Bayer obtained regulatory approvals in 16 countries.

In connection with this transaction, Bayer reached an agreement with BASF in October 2017 regarding the sale of selected Crop Science businesses. Further information can be found in Note [6.3].

The merger agreement also provides for payment by Bayer of a US$2 billion reverse break fee, in particular, in the event that the transaction has not been closed at the latest by June 14, 2018, because a necessary antitrust approval has not been granted and Bayer or Monsanto therefore terminates the merger agreement.

Acquisitions in 2016

The following acquisitions and adjustments to purchase price allocations were reported in 2016:

In the course of the global purchase price allocation for SeedWorks India Pvt. Ltd, Hyderabad, India, which was acquired in July 2015, improved information obtained about the acquired assets in the first quarter of 2016 led to decreases of €23 million in intangible assets and €8 million in deferred tax liabilities and a corresponding increase of €13 million in goodwill in the opening statement of financial position. In addition, the purchase price declined by €2 million to €78 million following completion of the final purchase price negotiations.

On February 12, 2016, Bayer and CRISPR Therapeutics AG, Basel, Switzerland, established the joint venture Casebia Therapeutics LLP, Ascot, United Kingdom. Its purpose is the development and commercialization of new methods to treat blood disorders, blindness and heart diseases.

On December 9, 2016, Bayer and Versant Ventures, San Francisco, United States, established the joint venture BlueRock Therapeutics LP, San Francisco, United States. The joint venture will be active in the field of next-generation regenerative medicine. Its goal is to develop induced pluripotent stem cell (iPSC) therapies to cure a range of diseases.

6.3 Divestments, material sale transactions and discontinued operations

Divestments in 2017

The effects of divestments in 2017 on the consolidated financial statements were as follows:

In October 2015, Bayer successfully floated the former MaterialScience subgroup on the stock market under the name “Covestro”. In view of the remaining majority interest, Covestro was fully consolidated in the Bayer Group until the end of September 2017.

Following various share sales, the interest held directly by Bayer was reduced to 24.6% by the end of September 2017. The buyers of the approximately 14 million shares sold on September 29, 2017, agreed to be bound by a lock-up arrangement pursuant to which they would not sell the shares they purchased until at least December 11, 2017. Under the contractual agreement, Bayer retained economic exposure to the price of the shares. Bayer Pension Trust holds a further 8.9% of the equity of Covestro AG.

In addition, Bayer and Covestro signed a control termination agreement at the end of September, as part of which Bayer undertakes not to exercise certain voting rights at the Covestro Annual General Meeting. Bayer therefore ceded de facto control of Covestro at the end of September 2017. Accordingly, the Covestro Group was deconsolidated at the end of the third quarter and, in view of Bayer's remaining significant influence, was recognized for the first time as an associate. Further details of the accounting for the Covestro Group as an associate using the equity method are given in Note [19]. Details of share sales are provided in Note [24].

At the end of September, the fair value of the remaining interest, €3.6 billion, was determined on the basis of the share price. The deconsolidation and remeasurement of the remaining interest in Covestro resulted in overall income before taxes of €3.1 billion, which is included in income from discontinued operations. This figure reflects a gain of €2.4 billion from the remeasurement of the remaining interest, a gain of €0.5 billion from the deconsolidation, and a gain of €0.2 billion from the performance of the shares sold on September 29, 2017, in the fourth quarter of 2017. The overall gain after taxes amounted to €3.0 billion. A deferred tax expense of €32 million was accounted for as part of the remeasurement of the remaining interest. In addition, an amount of minus €0.6 billion recognized in other comprehensive income was reclassified to retained earnings attributable to Bayer AG stockholders.

The aforementioned divestment and additional smaller divestments had the following effect in 2017:

B 6.3/1

Divested Assets and Liabilities

€ million	2016	2017
Goodwill	36	254
Patents and technologies	4	18
Marketing and distribution rights	16	28
Other rights	–	33
Property, plant and equipment	–	4,206
Other noncurrent assets	–	233
Deferred taxes	–	506
Inventories	184	1,840
Other current assets	–	3,005
Assets held for sale	–	3
Cash and cash equivalents	–	637
Provisions for pensions and other post-employment benefits	(28)	(1,201)
Other provisions	(97)	(779)
Financial liabilities	–	(1,809)
Other liabilities	–	(1,715)
Divested net assets	**115**	**5,259**

Discontinued operations

Following the loss of control, Covestro fulfilled the conditions for presentation as a discontinued operation for all of the periods prior to deconsolidation, including the prior year.

The sale of the Diabetes Care business to Panasonic Healthcare Holdings Co., Ltd., Tokyo, Japan, for approximately €1 billion was completed on January 4, 2016. The sale included the leading Contour™ portfolio of blood glucose meters and strips, other blood glucose monitoring sysems such as Breeze™2 and Elite™, and Microlet™ lancing devices.

The sale of the Diabetes Care business also comprised further significant obligations by Bayer that were fulfilled over a period of up to two years subsequent to the date of divestment. The sale proceeds were recognized accordingly until the end of 2017 and reported as income from discontinued operations. Deferred income was recognized in the statement of financial position and was dissolved as the obligations were fulfilled. Of this, an amount of €462 million was recognized in sales in 2017.

The obligations fulfilled over a period of up to two years after the divestment of the Diabetes Care business are also reported as discontinued operations in the income statement and the statement of cash flows. They resulted in sales of €39 million in 2017.

The items in the statement of financial position pertaining to the Diabetes Care business are shown in the segment reporting under “All Other Segments.” The statement of financial position includes other receivables (net: €3 million), income tax liabilities (€57 million) and miscellaneous provisions (€2 million).

The sale of the Consumer business (CS Consumer) of Bayer’s Environmental Science unit to SBM Développement SAS, Lyon, France, was completed on October 4, 2016. These activities were reported as discontinued operations from the second half of 2016.

The income statements for the discontinued operations are given below:

B 6.3/2

Income Statements for Discontinued Operations

	Covestro		Diabetes Care		CS Consumer		Total	
€ million	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Net sales	**11,826**	**10,556**	**573**	**501**	**195**	**–**	**12,594**	**11,057**
Cost of goods sold	(8,539)	(6,973)	(146)	(28)	(121)	–	(8,806)	(7,001)
Gross profit	**3,287**	**3,583**	**427**	**473**	**74**	**–**	**3,788**	**4,056**
Selling expenses	(1,326)	(1,016)	(9)	(4)	(83)	–	(1,418)	(1,020)
Research and development expenses	(261)	(200)	(1)	–	(11)	–	(273)	(200)
General administration expenses	(452)	(345)	(12)	(8)	(9)	–	(473)	(353)
Other operating income / expenses	56	3,150	(4)	(3)	(55)	–	(3)	3,147
EBIT [1]	**1,304**	**5,172**	**401**	**458**	**(84)**	**–**	**1,621**	**5,630**
Financial result	**(190)**	**(124)**	**–**	**–**	**–**	**–**	**(190)**	**(124)**
Income before income taxes	**1,114**	**5,048**	**401**	**458**	**(84)**	**–**	**1,431**	**5,506**
Income taxes	(312)	(580)	(76)	(80)	27	–	(361)	(660)
Income after income taxes	**802**	**4,468**	**325**	**378**	**(57)**	**–**	**1,070**	**4,846**
of which attributable to noncontrolling interest	282	759	–	–	–	–	282	759
of which attributable to Bayer AG stockholders (net income)	520	3,709	325	378	(57)	–	788	4,087

[1] For definition, see Combined Management Report, Chapter 2.4 “Alternative Performance Measures Used by the Bayer Group.”

The cash flows for the discontinued operations are as follows:

B 6.3/3

Cash Flows from Discontinued Operations

	Covestro		Diabetes Care		CS Consumer		Total	
€ million	2016	2017	2016	2017	2016	2017	2016	2017
Net cash provided by (used in) operating activities	1,824	1,473	788	50	42	–	2,654	1,523
Net cash provided by (used in) investing activities	(1,020)	(742)	–	–	–	–	(1,020)	(742)
Net cash provided by (used in) financing activities	1,014	(224)	(788)	(50)	(42)	–	184	(274)
Change in cash and cash equivalents	**1,818**	**507**	**–**	**–**	**–**	**–**	**1,818**	**507**

As no cash was assigned to the discontinued operations Diabetes Care and CS Consumer, the balance of the cash provided is deducted again in financing activities.

Assets held for sale

In connection with the planned acquisition of Monsanto, Bayer signed an agreement with BASF on October 13, 2017, concerning the sale of selected Crop Science businesses. The businesses to be sold comprise Bayer's global glufosinate ammonium business and the related LibertyLink™ technology for herbicide tolerance, a substantial part of the field crop seed business, including the related research and development capabilities. The seeds business being divested includes the global cotton seed business (excluding India and South Africa), the North American and European canola seed business, and the soybean seed business. The agreed base purchase price of €5.9 billion excludes the value of any net working capital and is subject to the customary adjustment mechanisms.

The transaction is subject to regulatory approvals as well as the successful closing of Bayer's acquisition of Monsanto. Bayer will continue to own, operate and maintain these businesses until the divestment is concluded.

The assets and liabilities held for sale are presented below:

B 6.3/4

Assets and Liabilities Held for Sale

€ million	Dec. 31, 2017
Goodwill	479
Other intangible assets	287
Property, plant and equipment	1,062
Other receivables	41
Deferred taxes	63
Inventories	149
Assets held for sale	**2,081**
Provisions for pensions and other post-employment benefits	11
Other provisions	79
Financial liabilities	14
Other liabilities	4
Deferred taxes	3
Liabilities directly related to assets held for sale	**111**

Notes to the Income Statements

7. Net sales

Net sales are derived primarily from product deliveries. Total reported net sales for 2017 amounted to €35,015 million, rising by €72 million, or 0.2%, compared with 2016. The increase resulted from the following factors:

B 7/1

Factors in Sales Development

	2017	
	€ million	**%**
Volume	810	+ 2.3
Price	(269)	− 0.8
Currency	(490)	− 1.4
Portfolio	21	+ 0.1
Total	**72**	**+ 0.2**

Breakdowns of net sales by segment and geographical area are given in the table in Note [1] and in Note [5], respectively.

8. Selling expenses

Selling expenses comprise all expenses incurred in the reporting period for the sale, storage and transportation of saleable products, advertising, the provision of advice to customers, and market research.

9. Research and development expenses

Research and development expenses and their accounting treatment are defined in Note [4]. Breakdowns of research and development expenses by segment and region are given in Note [1].

10. Other operating income

Other operating income was comprised as follows:

B 10/1

Other Operating Income

€ million	2016	2017
Gains on retirements of noncurrent assets	64	173
Reversal of impairment losses on receivables	18	23
Reversals of unutilized provisions	122	26
Gains from derivatives	255	291
Miscellaneous operating income	328	351
Total	**787**	**864**
of which special items	115	14

2016 figures restated

Gains on retirements of noncurrent assets included an €81 million gain from the sale of trademark rights for the Vagitrol™, Benadon™, Claradol™, Transipeg™ and Colopeg™ brands and some smaller brands (Consumer Health segment). In addition, a €49 million gain was realized on the sale of capitalized transfer rights by Bayer 04 Leverkusen Fußball GmbH (All Other Segments), Germany. In the Crop Science segment, a license agreement for herbicide active ingredients with FMC Corporation, United States resulted in income of €18 million..

Miscellaneous operating income includes a receivable relating to the nonfulifillment of a purchase obligation by one of our distribution partners in the amount of €34 million (Pharmaceuticals segment). The Crop Science segment received €25 million from insurers. A further €13 million was generated by the sale of research data following patent expirations (Crop Science segment). The transfer of a database to the joint venture Cooksonia Opco LLC, United States, with Ginkgo Bioworks, Inc., United States, brought additional income of €9 million for the Crop Science segment. In addition, a claim for damages of €8 million resulting from an infringement of a patent for Yasmin™ was recorded in the Pharmaceuticals segment.

Income from reversals of unutilized provisions included €9 million from the reversal of provisions for the Yasmin™ / YAZ™ litigation (2016: €104 million).

Furthermore, in 2016 miscellaneous operating income included a gain of €32 million at Bayer 04 Leverkusen Fußball GmbH from the sale of non-capitalized transfer rights (All Other Segments). In the Crop Science segment, milestone payments led to income of €21 million. In the Pharmaceuticals segment, a €14 million compensation payment was received in connection with the closure of the production site in Putuo, China. A €10 million gain (All Other Segments) was incurred on the sale of the BAYQUIK™ technology to Chemetics, Inc., Canada (Corporate Functions segment).

11. Other operating expenses

Other operating expenses were comprised as follows:

B 11/1

Other Operating Expenses

€ million	2016	2017
Losses on retirements of noncurrent assets	(19)	(39)
Impairment losses on receivables	(163)	(139)
Expenses related to significant legal risks	(262)	(258)
Losses from derivatives	(171)	(258)
Miscellaneous operating expenses	(264)	(254)
Total	**(879)**	**(948)**
of which special items	(205)	(202)

2016 figures restated

Of the impairment losses on receivables, €74 million (2016: €115 million) pertained to past-due receivables in Brazil.

The expenses related to significant legal risks amounted to €258 million in 2017 (2016: €262 million), which, as in the previous year, primarily included expenses in connection with litigation relating to the produts Xarelto™, Essure™ and Cipro™ / Avelox™.

Miscellaneous operating expenses included donations to charitable causes (all segments) and subsidies for patient assistance programs with government agencies and partners of health care systems (Pharmaceuticals segment) in the amount €52 million (2016: €43 million). A settlement relating to a seed license agreement led to an expense of €14 million (Crop Science segment). Further expenses of €11 million were incurred in connection with intellectual property and patent disputes about a herbicide active ingredient (Crop Science segment). In addition, expenses of €11 million were recorded for restructuring at Currenta GmbH & Co. OHG, Germany (All Other Segments).

The remaining amount of miscellaneous operating expenses comprised a large number of individually immaterial items at the subsidiaries.

In 2016, miscellaneous operating expenses included €34 million for provisions established by the Crop Science segment for environmental protection measures in the United States.

12. Personnel expenses and employee numbers

Personnel expenses for continuing operations rose in 2017 by €69 million to €9,528 million (2016: €9,459 million). The change was mainly due to higher expenses in connection with compensation adjustments, which were partially offset by lower employee bonuses.

B 12/1

Personnel Expenses

€ million	2016	2017
Salaries	7,602	7,567
Social expenses and expenses for pensions and other benefits	1,857	1,961
of which for defined contribution pension plans	491	488
of which for defined benefit and other pension plans	389	445
Total	**9,459**	**9,528**

2016 figures restated

The personnel expenses shown here do not contain the interest portion of the allocation to personnel-related provisions – mainly for pensions and other post-employment benefits – which is included in the financial result under other financial expenses (Note [13.3]).

The average numbers of employees, classified by corporate function, were as shown in the table below:

B 12/2

Employees

	2016	2017
Production	40,397	39,298
Marketing and distribution	37,270	37,147
Research and development	13,999	13,958
General administration	8,322	9,359
Total	**99,988**	**99,762**
Apprentices	1,998	1,918

2016 figures restated

The number of employees on either permanent or temporary contracts is stated in full-time equivalents (FTE), with part-time employees included on a pro-rated basis in line with their contractual working hours. The figures do not include apprentices.

13. Financial result

The financial result for 2017 was minus €1,326 million (2016: minus €965 million), comprising equity-method income of €20 million (2016: loss of €6 million), financial expenses of €1,635 million (2016: €1,108 million) and financial income of €289 million (2016: €149 million). Details of the components of the financial result are provided in the following sections.

13.1 Income (loss) from investments in affiliated companies

The net income (loss) from investments in affiliated companies was comprised as follows:

B 13.1/1

Income (Loss) from Investments in Affiliated Companies

€ million	2016	2017
Net income (loss) from investments accounted for using the equity method (equity-method income / loss)	(6)	20
Expenses		
Impairment losses on investments in affiliated companies	(2)	(1)
Losses from the sale of investments in affiliated companies	–	(1)
Income		
Impairment loss reversals on investments in affiliated companies	–	5
Income / losses from investments in affiliated companies and from profit and loss transfer agreements (net)	–	2
Gains from the sale of investments in affiliated companies	6	5
Total	**(2)**	**30**

2016 figures restated

The main components of the income from investments in affiliated companies were the equity-method income of €51 million from the remaining interest in Covestro and the equity-method losses of €16 million (2016: €4 million) and €15 million (2016: €3 million), respectively, from the Casebia Group and the BlueRock joint ventures.

Further details of the companies accounted for using the equity method are given in Note [19].

13.2 Net interest expense

The net interest expense was comprised as follows:

B 13.2/1

Net Interest Expense

€ million	2016	2017
Expenses		
Interest and similar expenses	(638)	(682)
Interest expenses for derivatives (held for trading)	(3)	(3)
Income		
Interest and similar income	135	272
Interest income from derivatives (held for trading)	2	–
Total	**(504)**	**(413)**

2016 figures restated

Interest and similar expenses included interest expense of €54 million (2016: €41 million) relating to nonfinancial liabilities. Interest and similar income included interest income of €96 million (2016: €10 million) from nonfinancial assets.

The change in the liability for redeemable noncontrolling interest is reflected in interest income or expense. In 2017, a €49 million (2016: €0 million) increase in this liability was recognized as interest expense.

13.3 Other financial income and expenses

Other financial income and expenses were comprised as follows:

B 13.3/1

Other Financial Income and Expenses

€ million	2016	2017
Expenses		
Interest portion of interest-bearing provisions	(251)	(189)
Exchange loss	(121)	(326)
Miscellaneous financial expenses	(93)	(433)
Income		
Miscellaneous financial income	6	5
Total	**(459)**	**(943)**

2016 figures restated

The interest portion of noncurrent provisions comprised €191 million (2016: €236 million) in interest expense for pension and other post-employment benefit provisions and a positive amount of €2 million (2016: minus €15 million) in effects of interest expense and interest-rate fluctuations for other provisions and corresponding overfunding. The interest expense for pension and other post-employment benefit provisions included €539 million (2016: €640 million) for the unwinding of discount on the present value of the defined benefit obligation and €348 million (2016: €404 million) in interest income from plan assets.

The miscellaneous financial expenses included €210 million in commitment fees and other fees related to the syndicated bank financing for the planned acquisition of Monsanto. The €172 million in negative fair value changes of the debt instruments (exchangeable bond) issued in June 2017 was also recognized in miscellaneous financial expenses.

14. Taxes

The breakdown of tax expenses by origin was as follows:

B 14/1

Tax Expense by Origin

€ million	2016	2016 Of which income taxes	2017	2017 Of which income taxes
Taxes paid or accrued				
Current income taxes				
Germany	(864)		(794)	
Other countries	(725)		(737)	
Other taxes				
Germany	(80)		(87)	
Other countries	(137)		(118)	
	(1,806)	**(1,589)**	**(1,736)**	**(1,531)**
Deferred taxes				
from temporary differences	524		70	
from tax loss and interest carryforwards and tax credits	48		132	
	572	**572**	**202**	**202**
Total	**(1,234)**	**(1,017)**	**(1,534)**	**(1,329)**

2016 figures restated

The other taxes mainly include land, vehicle and other indirect taxes. They are reflected in the respective functional cost items.

The deferred tax assets and liabilities were allocable to the following items in the statements of financial position:

B 14/2

Deferred Tax Assets and Liabilities

	Dec. 31, 2016		Dec. 31, 2017	
€ million	**Deferred tax assets**	**Deferred tax liabilities**	**Deferred tax assets**	**Deferred tax liabilities**
Intangible assets	1,478	1,766	799	1,469
Property, plant and equipment	264	692	79	323
Financial assets	240	224	204	81
Inventories	1,267	32	1,117	15
Receivables	71	547	60	464
Other assets	39	13	39	2
Provisions for pensions and other post-employment benefits	3,637	983	2,520	367
Other provisions	1,083	112	610	64
Liabilities	793	133	534	101
Tax loss and interest carryforwards	473		486	–
Tax credits	177		200	–
	9,522	**4,502**	**6,648**	**2,886**
of which noncurrent	7,868	3,662	5,194	2,214
Set-off	(3,172)	(3,172)	(1,733)	(1,733)
Total	**6,350**	**1,330**	**4,915**	**1,153**

Deferred taxes on remeasurements, recognized outside profit or loss, of the net liability for defined benefit pension and other post-employment benefits diminished equity by €515 million (2016: increased equity by €228 million). Deferred taxes on changes, recognized outside profit or loss, in fair values of available-for-sale financial assets and derivatives designated as hedges increased equity by €56 million (2016: diminished equity by €24 million). These effects on equity are reported in the statement of comprehensive income.

The use of tax loss carryforwards reduced current income taxes in 2017 by €47 million (2016: €82 million). The use of tax credits reduced current income taxes by €16 million (2016: €16 million).

Of the total tax loss and interest carryforwards of €6,443 million, including interest carryforwards of €148 million (2016: €5,447 million, including interest carryforwards of €118 million), an amount of €2,890 million, including interest carryforwards of €1 million (2016: €2,269 million, including interest carryforwards of €0 million) is expected to be usable within a reasonable period. The increase in tax loss and interest carryforwards was mainly due to the current development of business in the United States and Brazil. Deferred tax assets of €486 million (2016: €473 million) were recognized for the amount of tax loss and interest carryforwards expected to be usable.

The use of €3,553 million of tax loss and interest carryforwards, including interest carryforwards of €147 million (2016: €3,178 million, including interest carryforwards of €118 million) was subject to legal or economic restrictions. Consequently, no deferred tax assets were recognized for this amount. If these tax loss and interest carryforwards had been fully usable, deferred tax assets of €351 million (2016: €294 million) would have been recognized.

Tax credits of €200 million were recognized in 2017 (2016: €177 million) as deferred tax assets. The use of €28 million (2016: €37 million) of tax credits was subject to legal or economic restrictions. Consequently, no deferred tax assets were recognized for this amount.

Unusable tax credits, tax loss carryforwards and interest carryforwards will expire as follows:

B 14/3

Expiration of Unusable Tax Credits, Tax Loss and Interest Carryforwards

€ million	Tax credits		Tax loss and interest carryforwards	
	Dec. 31, 2016	**Dec. 31, 2017**	**Dec. 31, 2016**	**Dec. 31, 2017**
Within one year	4	4	4	17
Within two years	–	–	1	15
Within three years	4	–	31	114
Within four years	–	1	132	28
Within five years	29	19	31	70
Thereafter	–	4	2,979	3,309
Total	**37**	**28**	**3,178**	**3,553**

In 2017, subsidiaries that reported losses for 2017 or 2016 recognized net deferred tax assets totaling €2,303 million (2016: €2,575 million) from temporary differences and tax loss carryforwards. These assets were considered to be unimpaired because the companies concerned were expected to generate taxable income in the future.

Deferred tax liabilities of €22 million were recognized in 2017 (2016: €41 million) for planned dividend payments by subsidiaries. Deferred tax liabilities were not recognized for differences on €18,272 million (2016: €20,069 million) of retained earnings of subsidiaries because these earnings are to be reinvested for an indefinite period.

The reported tax expense of €1,329 million for 2017 (2016: €1,017 million) differed by minus €246 million (2016: €135 million) from the expected tax expense of €1,083 million (2016: €1,152 million) that would have resulted from applying an expected weighted average tax rate to the pre-tax income of the Group. This average rate, derived from the expected tax rates of the individual Group companies, was 23.7% in 2017 (2016: 24.1%). The effective tax rate was 29.0% (2016: 21.3%).

The reconciliation of expected to reported income tax expense and of the expected to the effective tax rate for the Group was as follows:

B 14/4

Reconciliation of Expected to Actual Income Tax Expense

	2016		2017	
	€ million	%	€ million	%
Expected income tax expense and expected tax rate	**1,152**	**24.1**	**1,083**	**23.7**
Reduction in taxes due to tax-free income				
Income related to the operating business	(127)	(2.6)	(135)	(3.0)
Income from affiliated companies and divestment proceeds	(1)	–	(16)	(0.3)
First-time recognition of previously unrecognized deferred tax assets on tax loss and interest carryforwards	(17)	(0.4)	(31)	(0.7)
Use of tax loss and interest carryforwards on which deferred tax assets were not previously recognized	(2)	–	(4)	(0.1)
Increase in taxes due to non-tax-deductible expenses				
Expenses related to the operating business	142	3.0	168	3.7
Impairment losses on investments in affiliated companies	2	–	–	–
New tax loss and interest carryforwards unlikely to be usable	43	0.9	69	1.5
Existing tax loss and interest carryforwards on which deferred tax assets were previously recognized but which are unlikely to be usable	6	0.1	1	–
Tax income (–) and expenses (+) relating to other periods	(76)	(1.6)	(128)	(2.8)
Tax effects of changes in tax rates	(5)	(0.1)	384	8.4
Other tax effects	(100)	(2.1)	(62)	(1.4)
Actual income tax expense and effective tax rate	**1,017**	**21.3**	**1,329**	**29.0**

2016 figures restated

The reported tax expense contains a one-time effect in the amount of €455 million that results solely from the U.S. tax reform passed on December 22, 2017, which provides for a reduction in the corporate tax rate from 35% to 21% from January 1, 2018, leading to a remeasurement of all deferred tax assets and liabilities associated with U.S. companies. This resulted in deferred tax expense of €409 million for 2017 due to changes in tax rates. The additional tax on nonrepatriated profits, which previously had not been taxed in the United States, led to prior-period tax expenses of €46 million.

15. Income/losses attributable to noncontrolling interest

Income attributable to noncontrolling interest amounted to €791 million (2016: €468 million). Losses attributable to noncontrolling interest amounted to €33 million (2016: €173 million). As in the previous years, the income and losses primarily related to Covestro.

16. Earnings per share

Earnings per share from continuing operations are determined according to IAS 33 (Earnings per Share) by dividing net income (income after income taxes attributable to Bayer AG stockholders) minus income from discontinued operations after income taxes (attributable to Bayer AG stockholders) by the weighted average number of shares. Earnings per share for continuing and discontinued operations are calculated by dividing net income by the weighted average number of shares.

In November 2016, Bayer placed €4.0 billion in mandatory convertible notes without granting subscription rights to existing stockholders of the company. According to IAS 33.23, the weighted average number of shares increases as soon as the notes contract is signed, and this increase must be taken into account in calculating undiluted and diluted earnings per share. The new weighted average number of shares is based on a minimum conversion price that is adjusted annually due to the dividend payment and determines the maximum conversion ratio. The minimum conversion price stood at €87.82 as of December 31, 2017 (December 31, 2016: €90.00). Undiluted and diluted earnings per share are not adjusted for financing expenses incurred in connection with the mandatory convertible notes because the interest component was recognized outside profit or loss when the notes were placed. Further details of the mandatory convertible notes are provided in Note [24].

Since the undiluted and diluted earnings per share were determined for each interim reporting period, earnings per share for the full year or year to date may differ from the sum of the earnings per share for the respective interim reporting periods.

B 16/1

Earnings per Share

€ million	2016	2017
Income from continuing operations after income taxes	3,756	3,248
of which attributable to noncontrolling interest	13	(1)
of which attributable to Bayer AG stockholders	3,743	3,249
Income from discontinued operations after income taxes	1,070	4,846
of which attributable to noncontrolling interest	282	759
of which attributable to Bayer AG stockholders	788	4,087
Income after income taxes	4,826	8,094
of which attributable to noncontrolling interest	295	758
of which attributable to Bayer AG stockholders (net income)	4,531	7,336
	Shares	Shares
Weighted average number of shares	**832,502,808**	**872,107,808**
Earnings per share (€)		
From continuing operations		
Basic	4.50	3.73
Diluted	4.50	3.73
From discontinued operations		
Basic	0.94	4.68
Diluted	0.94	4.68
From continuing and discontinued operations		
Basic	5.44	8.41
Diluted	5.44	8.41

2016 figures restated

Notes to the Statements of Financial Position

17. Goodwill and other intangible assets

Changes in intangible assets in 2017 were as follows:

B 17/1

Changes in Intangible Assets

€ million	Acquired goodwill	Patents and technologies	Trademarks	Marketing and distribution rights	Production rights	R&D projects	Other rights and advance payments	Total
Cost of acquisition or generation, December 31, 2016	**16,312**	**13,162**	**11,045**	**2,044**	**2,138**	**887**	**2,666**	**48,254**
Acquisitions	51	–	85	–	4	–	–	140
Capital expenditures	–	78	–	54	–	458	167	757
Retirements	–	(61)	(31)	(4)	–	(220)	(365)	(681)
Transfers	–	–	1	45	–	17	(63)	–
Transfers (IFRS 5)	(481)	(123)	(40)	(14)	(118)	(43)	(403)	(1,222)
Divestments / changes in the scope of consolidation	(254)	(31)	(5)	(105)	(96)	–	(322)	(813)
Inflation adjustment (IAS 29)	5	–	–	–	–	–	–	5
Exchange differences	(882)	(164)	(602)	(109)	(5)	(55)	(116)	(1,933)
December 31, 2017	**14,751**	**12,861**	**10,453**	**1,911**	**1,923**	**1,044**	**1,564**	**44,507**
Accumulated amortization and impairment losses, December 31, 2016	**–**	**9,312**	**3,673**	**1,268**	**2,027**	**235**	**1,860**	**18,375**
Retirements	–	(36)	(20)	(4)	–	(201)	(356)	(617)
Amortization and impairment losses in 2017	–	596	580	170	21	98	228	1,693
Amortization	–	596	369	133	21	–	118	1,237
Impairment losses	–	–	211	37	–	98	110	456
Impairment loss reversals	–	–	–	–	–	–	–	–
Transfers	–	–	–	1	–	–	(1)	–
Transfers (IFRS 5)	–	(86)	(39)	(9)	(118)	(2)	(199)	(453)
Divestments / changes in the scope of consolidation	–	(13)	(5)	(77)	(90)	–	(295)	(480)
Exchange differences	–	(135)	(148)	(66)	(4)	(13)	(70)	(436)
December 31, 2017	**–**	**9,638**	**4,041**	**1,283**	**1,836**	**117**	**1,167**	**18,082**
Carrying amounts, December 31, 2017	**14,751**	**3,223**	**6,412**	**628**	**87**	**927**	**397**	**26,425**
Carrying amounts, December 31, 2016	**16,312**	**3,850**	**7,372**	**776**	**111**	**652**	**806**	**29,879**

Capital expenditures for research and development projects include an advance payment to Loxo Oncology, Inc., in the amount of US$400 million as part of an exclusive global collaboration relating to the development and marketing of larotrectinib.

Impairment losses of €456 million were recognized on intangible assets. In the Pharmaceuticals segment, impairment losses of €69 million were recognized on intangible assets in the oncology area (OncoMed). In addition, impairment losses of €59 million were recognized on a drug candidate for the treatment of lung infections (Amikacin Inhale) due to new research findings. Furthermore, impairment losses of €65 million were recognized on intangible assets in the women's health and ophthalmology areas. In the Consumer Health segment, a weaker market environment led to impairment losses of €155 million for a sunscreen product brand (Coppertone™) and €47 million on a trademark in the allergies area (Aerius™). In the Crop Science segment, an impairment loss of €41 million was recognized in connection with the termination of a research project.

The remaining impairment losses pertained to intangible assets in the Pharmaceuticals (€2 million), Consumer Health (€3 million), Crop Science (€5 million) and Animal Health (€9 million) segments along with All Other Segments (€1 million).

Details of acquisitions and divestments are provided in Notes [6.2] and [6.3]. The impairment testing procedure for goodwill and other intangible assets is explained in Note [4].

Changes in intangible assets in 2016 were as follows:

B 17/2

Changes in Intangible Assets (Previous Year)

€ million	Acquired goodwill	Patents and technologies	Trademarks	Marketing and distribution rights	Production rights	R&D projects	Other rights and advance payments	Total
Cost of acquisition or generation, December 31, 2015	**16,096**	**13,069**	**10,952**	**1,944**	**2,172**	**946**	**2,600**	**47,779**
Acquisitions	9	1	–	–	–	(23)	–	(13)
Capital expenditures	–	55	3	47	5	96	157	363
Retirements	–	(6)	(39)	(14)	(25)	(108)	(80)	(272)
Transfers	–	5	–	50	3	(43)	(15)	–
Transfers (IFRS 5)	–	(5)	(8)	(15)	(16)	–	(11)	(55)
Divestments/changes in the scope of consolidation	–	–	(8)	–	–	–	–	(8)
Inflation adjustment (IAS 29)	3	–	–	–	–	–	–	3
Exchange differences	204	43	145	32	(1)	19	15	457
December 31, 2016	**16,312**	**13,162**	**11,045**	**2,044**	**2,138**	**887**	**2,666**	**48,254**

B 17/2 (continued)

Changes in Intangible Assets (Previous Year)

€ million	Acquired goodwill	Patents and technologies	Trademarks	Marketing and distribution rights	Production rights	R&D projects	Other rights and advance payments	Total
Accumulated amortization and impairment losses, December 31, 2015	**–**	**8,277**	**3,083**	**1,134**	**2,021**	**225**	**1,765**	**16,505**
Retirements	–	(2)	(38)	(14)	(25)	(106)	(66)	(251)
Amortization and impairment losses in 2016	–	1,007	604	144	48	109	160	2,072
Amortization	–	708	393	137	28	–	129	1,395
Impairment losses	–	299	211	7	20	109	31	677
Impairment loss reversals	–	–	(1)	–	–	–	–	(1)
Transfers	–	–	–	–	–	–	–	–
Transfers (IFRS 5)	–	(5)	(8)	(15)	(16)	–	(11)	(55)
Divestments / changes in the scope of consolidation	–	–	–	–	–	–	(1)	(1)
Exchange differences	–	35	33	19	(1)	7	13	106
December 31, 2016	**–**	**9,312**	**3,673**	**1,268**	**2,027**	**235**	**1,860**	**18,375**
Carrying amounts, December 31, 2016	**16,312**	**3,850**	**7,372**	**776**	**111**	**652**	**806**	**29,879**
Carrying amounts, December 31, 2015	**16,096**	**4,792**	**7,869**	**810**	**151**	**721**	**835**	**31,274**

Goodwill and other intangible assets with an indefinite useful life that are of material significance for the Bayer Group are allocated to the following cash-generating units or unit groups as of the end of the reporting period:

B 17/3

Intangible Assets with an Indefinite Useful Life

Reporting segment	Cash-generating unit / unit group	Goodwill (€ million)	Material intangible assets with indefinite useful life (€ million)
Pharmaceuticals	Pharmaceuticals	7,105	857
Consumer Health	Consumer Care	5,854	24
Crop Science	Crop Protection	1,120	41
Crop Science	Seeds	122	98

In the case of research and development projects, the point in time from which a capitalized asset can be expected to generate an economic benefit for the company cannot be determined. Such assets are therefore classified as having an indefinite useful life. Development projects were capitalized at a total amount of €927 million as of the end of 2017 (2016: €652 million).

Another intangible asset classified as having an indefinite useful life is the Bayer Cross, which was reacquired for the North America region in 1994, having been awarded to the United States and Canada under the reparations agreements at the end of the First World War. The period for which the Bayer Group will derive an economic benefit from this name cannot be determined as Bayer intends to make continuous use of it. The Bayer Cross is capitalized at €108 million.

18. Property, plant and equipment

Changes in property, plant and equipment in 2017 were as follows:

B 18/1

Changes in Property, Plant and Equipment

€ million	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Construction in progress and advance payments	Total
Cost of acquisition or construction, December 31, 2016	**10,346**	**20,335**	**2,297**	**2,551**	**35,529**
Acquisitions	–	–	–	–	–
Capital expenditures	286	460	193	1,022	1,961
Retirements	(82)	(304)	(143)	–	(529)
Transfers	282	699	52	(1,033)	–
Transfers (IFRS 5)	(498)	(601)	(66)	(240)	(1,405)
Divestments / changes in the scope of consolidation	(3,167)	(11,059)	(500)	(455)	(15,181)
Inflation adjustment (IAS 29)	5	–	–	–	5
Exchange differences	(466)	(884)	(112)	(82)	(1,544)
December 31, 2017	**6,706**	**8,646**	**1,721**	**1,763**	**18,836**
Accumulated depreciation and impairment losses, December 31, 2016	**5,592**	**15,111**	**1,685**	**27**	**22,415**
Retirements	(60)	(280)	(125)	–	(465)
Depreciation and impairment losses in 2017	334	893	223	5	1,455
Depreciation	310	860	222	–	1,392
Impairment losses	24	33	1	5	63
Impairment loss reversals	(7)	(6)	–	–	(13)
Transfers	6	4	(1)	(9)	–
Transfers (IFRS 5)	(82)	(214)	(31)	–	(327)
Divestments / changes in the scope of consolidation	(1,923)	(8,631)	(420)	(1)	(10,975)
Exchange differences	(199)	(610)	(75)	(3)	(887)
December 31, 2017	**3,661**	**6,267**	**1,256**	**19**	**11,203**
Carrying amounts, December 31, 2017	**3,045**	**2,379**	**465**	**1,744**	**7,633**
Carrying amounts, December 31, 2016	**4,754**	**5,224**	**612**	**2,524**	**13,114**

Including impairment loss reversals of €13 million, net impairment losses totaling €50 million were recognized on property, plant and equipment in the Pharmaceuticals (€23 million), Consumer Health (€8 million), and Crop Science (€25 million) segments, as well as All Other Segments (€1 million), while impairment loss reversals were recognized for Covestro (€7 million).

In 2017, borrowing costs of €31 million (2016: €31 million) were capitalized as components of the cost of acquisition or construction of qualifying assets, applying an average interest rate of 2.5% (2016: 2.5%).

Capitalized property, plant and equipment included assets with a total net value of €231 million (2016: €471 million) held under finance leases. The cost of acquisition or construction of these assets as of the closing date totaled €368 million (2016: €867 million). They comprised buildings with a carrying amount of €98 million (2016: €146 million), plant installations and machinery with a carrying amount of €75 million (2016: €191 million), and other property, plant and equipment with a carrying amount of €58 million (2016: €134 million). For information on the liabilities arising from finance leases, see Note [27].

In 2017, rental payments of €385 million (2016: €346 million), excluding Covestro, were made for assets held under operating leases as defined in IAS 17 (Leases).

Lease payments of €1 million are expected to be received in 2018 from operating leases – as defined in IAS 17 (Leases) – pertaining to property, plant and equipment, excluding the investment property stated below. Lease payments totaling €1 million are expected to be received between 2019 and 2022 and lease payments totaling €0 million after 2022.

Investment property

The fair values of investment property are mainly determined using the income approach based on internal valuations for buildings and developed sites, and using the market comparison approach for undeveloped sites.

The total carrying amount of investment property as of December 31, 2017, was €97 million (December 31, 2016: €136 million). The fair value of this property was €336 million (2016: €507 million). The rental income from investment property was €14 million (2016: €11 million), and the operating expenses directly allocable to this property amounted to €4 million (2016: €5 million). A further amount of €1 million (2016: €1 million) in operating expenses was directly allocable to investment property from which no rental income was derived.

Changes in property, plant and equipment in 2016 were as follows:

B 18/2

Changes in Property, Plant and Equipment (Previous Year)

€ million	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Construction in progress and advance payments	Total
Cost of acquisition or construction, December 31, 2015	**9,685**	**19,418**	**2,142**	**2,295**	**33,540**
Acquisitions	–	–	–	–	–
Capital expenditures	248	369	206	1,441	2,264
Retirements	(69)	(262)	(158)	(9)	(498)
Transfers	407	698	82	(1,187)	–
Transfers (IFRS 5)	(14)	(4)	(1)	(1)	(20)
Divestments / changes in the scope of consolidation	–	–	–	–	–
Inflation adjustment (IAS 29)	3	1	–	–	4
Exchange differences	86	115	26	12	239
December 31, 2016	**10,346**	**20,335**	**2,297**	**2,551**	**35,529**

B 18/2 (continued)

Changes in Property, Plant and Equipment (Previous Year)

€ million	Land and buildings	Plant installations and machinery	Furniture, fixtures and other equipment	Construction in progress and advance payments	Total
Accumulated depreciation and impairment losses, December 31, 2015	**5,255**	**14,303**	**1,578**	**29**	**21,165**
Retirements	(49)	(245)	(139)	(6)	(439)
Depreciation and impairment losses in 2016	334	936	235	5	1,510
Depreciation	314	927	234	–	1,475
Impairment losses	20	9	1	5	35
Impairment loss reversals	–	–	–	–	–
Transfers	5	(4)	–	(1)	–
Transfers (IFRS 5)	(2)	(1)	(1)	–	(4)
Divestments / changes in the scope of consolidation	–	–	–	–	–
Divestments / changes in the scope of consolidation	–	–	–	–	–
Exchange differences	49	122	12	–	183
December 31, 2016	**5,592**	**15,111**	**1,685**	**27**	**22,415**
Carrying amounts, December 31, 2016	**4,754**	**5,224**	**612**	**2,524**	**13,114**
Carrying amounts, December 31, 2015	**4,430**	**5,115**	**564**	**2,266**	**12,375**

19. Investments accounted for using the equity method

Four (2016: five) associates and eight (2016: six) joint ventures were accounted for in the consolidated financial statements using the equity method.

B 19/1

Associates and Joint Ventures Accounted for Using the Equity Method

Company name	Place of business	Bayer's interest (%)
Associates		
Bayer Trendlines Ag Innovation Fund, L.P [1]	Misgav, Israel	100
Covestro AG	Leverkusen, Germany	24.6
Flagship Ventures V Agricultural Fund, L.P [1]	Cambridge, Massachusetts, U.S.A.	99.9
Nanjing Baijingyu Pharmaceutical Co., Ltd. [1]	Nanjing, China	15
Joint ventures		
Bayer Zydus Pharma Private Limited	Mumbai, India	50
BlueRock Therapeutics Canada ULC	Vancouver, Canada	42.9
BlueRock Therapeutics GP LLC	San Francisco, California, U.S.A.	50
BlueRock Therapeutics LP	San Francisco, California, U.S.A.	42.9
Casebia Therapeutics LLC	Cambridge, Massachusetts, U.S.A.	50
Casebia Therapeutics LLP	Ascot, U.K.	50
Cooksonia Opco LLC	Boston, Massachusetts, U.S.A.	50
DCSO Deutsche Cyber-Sicherheitsorganisation GmbH	Berlin, Germany	25

[1] For information concerning significant influence, see Note [6.1].

In October 2015, Bayer successfully floated the former MaterialScience subgroup on the stock market under the name "Covestro". Covestro is a leading global producer of high-tech polymer materials and develops innovative product solutions for a wide variety of everyday uses. The Covestro Group was deconsolidated at the end of the third quarter of 2017, and, in view of Bayer's remaining significant influence, was recognized for the first time as an associate and accounted for using the equity method. See Note [6.3] for details on the deconsolidation of the Covestro Group.

The remaining interest in Covestro at the time of deconsolidation was remeasured at €3.6 billion based on its share price, which led to the identification of hidden reserves and liabilities. According to the purchase price allocation, the hidden reserves and liabilities primarily related to noncurrent assets (€1.9 billion), current assets (€0.1 billion), noncurrent liabilities (€0.6 billion) and goodwill (€1.0 billion).

The following two tables contain summarized data from the income statements and statements of financial position of the Covestro Group, and show the respective amounts recognized in the consolidated financial statements of the Bayer Group.

B 19/2

Earnings Data of the Covestro Group

€ million	2016	Q4 2017
Net sales	–	3,522
Income after income taxes	–	569
of which attributable to Covestro AG shareholders	–	566
Other comprehensive income after income taxes	–	(193)
of which attributable to Covestro AG shareholders	–	(191)
Total comprehensive income after income taxes	–	376
of which attributable to Covestro AG shareholders	–	375
Share of total comprehensive income after income taxes	–	92
Share of income after income taxes	**–**	**139**
Group adjustments	–	(88)
Equity-method income	**–**	**51**

B 19/3

Data from the Statements of Financial Position of the Covestro Group

€ million	Dec. 31, 2016	Dec. 31, 2017
Noncurrent assets	–	5,606
Current assets	–	5,735
Noncurrent liabilities	–	2,885
Current liabilities	–	3,091
Equity	–	5,365
Share of equity	**–**	**1,320**
Group adjustments	–	2,307
Carrying amount	**–**	**3,627**

The adjustments to the Group data contain hidden reserves and liabilities identified in the course of the purchase price allocation and their measurement using the equity method.

In December 2015, Bayer and CRISPR Therapeutics AG, Switzerland, agreed to establish a company to develop and commercialize new, breakthrough therapeutics for blood disorders, blindness and congenital heart diseases. The joint venture Casebia Therapeutics, established at the beginning of 2016, has access to gene-editing technology from CRISPR Therapeutics in specific disease areas, as well as access to protein engineering expertise and relevant disease know-how through Bayer.

The following two tables contain summarized data from the income statements and statements of financial position of the Casebia Group, which is accounted for using the equity method, and show the respective amounts recognized in the consolidated financial statements of the Bayer Group.

B 19/4

Earnings Data of the Casebia Group

€ million	2016	2017
Net sales	–	–
Loss after income taxes	(8)	(32)
Share of loss after income taxes	(4)	(16)
Equity-method loss	**(4)**	**(16)**

B 19/5

Data from the Statements of Financial Position of the Casebia Group

€ million	Dec. 31, 2016	Dec. 31, 2017
Noncurrent assets	68	70
Current assets	4	24
Noncurrent liabilities	–	8
Current liabilities	3	4
Equity	69	82
Share of equity	**38**	**69**
Other	242	162
Carrying amount	**280**	**231**

The item “Other” comprises Bayer’s outstanding capital contribution obligation.

The following table contains a summary of the aggregated income statement data and aggregated carrying amounts of the individually nonmaterial associates accounted for using the equity method.

B 19/6

Earnings Data and Carrying Amounts of Associates Accounted for Using the Equity Method

€ million	2016	2017
Income after income taxes	4	7
Other comprehensive income after income taxes	3	28
Total comprehensive income after income taxes	7	35
Share of income after income taxes	**2**	**1**
Share of total comprehensive income after income taxes	5	29
Carrying amount	**247**	**37**

2016 figures restated

The following table contains a summary of the aggregated income statement data and aggregated carrying amounts of the individually nonmaterial joint ventures that are accounted for using the equity method.

B 19/7

Earnings Data and Carrying Amounts of Joint Ventures Accounted for Using the Equity Method

€ million	2016	2017
Income after income taxes	(6)	(16)
Total comprehensive income after income taxes	(6)	(16)
Share of income after income taxes	**(4)**	**(16)**
Share of total comprehensive income after income taxes	(4)	(16)
Carrying amount	**57**	**112**

2016 figures restated

20. Other financial assets

The other financial assets were comprised as follows:

B 20/1

Other Financial Assets

€ million	Dec. 31, 2016 Total	Dec. 31, 2016 Of which current	Dec. 31, 2017 Total	Dec. 31, 2017 Of which current
Loans and receivables	2,140	2,087	1,718	1,501
Available-for-sale financial assets	4,629	3,517	2,728	1,502
of which debt instruments	4,371	3,514	2,463	1,499
of which equity instruments	258	3	265	3
Held-to-maturity financial investments	65	8	57	15
Receivables from derivatives	714	663	647	509
Receivables under lease agreements	8	–	13	2
Total	**7,556**	**6,275**	**5,163**	**3,529**

Loans and receivables included €1,390 million (2016: €1,770 million) in bank deposits and €108 million (2016: €305 million) in commercial paper.

The debt instruments classified as available-for-sale financial assets included capital of €605 million (2016: €612 million) provided to Bayer-Pensionskasse VVaG (Bayer-Pensionskasse) for its effective initial fund, and jouissance right capital (Genussrechtskapital) of €152 million (2016: €154 million), also provided to Bayer-Pensionskasse. Also reported in this category were investments of €1,497 million (2016: €3,513 million) in money market funds.

The equity instruments reported as available-for-sale financial assets included the €101 million (2016: €98 million) investment in CRISPR Therapeutics AG, Switzerland, along with €35 million (2016: €32 million) in instruments whose fair value could not be determined from a stock exchange or other market price or by discounting reliably determinable future cash flows. These equity instruments were recognized at cost.

Further information on the accounting for receivables from derivatives is given in Note [30].

Receivables under lease agreements relate to finance leases where Bayer is the lessor and the economic owner of the leased assets is the lessee. These receivables comprised expected lease payments of €15 million (2016: €39 million), including €2 million (2016: €31 million) in interest. Of the expected lease payments, €3 million (2016: €1 million) is due within one year, €10 million (2016: €2 million) within the following four years and €2 million (2016: €36 million) in subsequent years.

21. Inventories

Inventories were comprised as follows:

B 21/1

Inventories

€ million	Dec. 31, 2016	Dec. 31, 2017
Raw materials and supplies	2,396	1,761
Work in process, finished goods and goods purchased for resale	5,991	4,776
Advance payments	21	13
Total	**8,408**	**6,550**

The deconsolidation of Covestro reduced inventories by €1,831 million.

Impairment losses recognized on inventories were reflected in the cost of goods sold. They were comprised as follows:

B 21/2

Impairments of Inventories

€ million	2016	2017
Accumulated impairment losses, January 1	**(427)**	**(416)**
Divestments / changes in the scope of consolidation	–	13
Impairment losses in the reporting period	(321)	(235)
Impairment loss reversals or utilization	346	261
Exchange differences	(18)	45
Transfers (IFRS 5)	4	1
Accumulated impairment losses, December 31	**(416)**	**(331)**

22. Trade accounts receivable

Trade accounts receivable less impairment losses amounted to €8,582 million (2016: €10,969 million) on the closing date and were comprised as follows:

B 22/1

Trade Accounts Receivable

€ million	2016	2017
Trade accounts receivable (before impairments)	11,377	9,007
Accumulated impairment losses	(408)	(425)
Carrying amount, December 31	**10,969**	**8,582**
of which noncurrent	144	97

The deconsolidation of Covestro reduced trade accounts receivable by €1,943 million.

Changes in impairment losses on trade accounts receivable were as follows:

B 22/2

Impairments of Trade Accounts Receivable

€ million	2016	2017
Accumulated impairment losses, January 1	**(248)**	**(408)**
Divestments / changes in the scope of consolidation	–	41
Impairment losses in the reporting period	(165)	(133)
Impairment loss reversals or utilization	35	29
Exchange differences	(30)	46
Accumulated impairment losses, December 31	**(408)**	**(425)**

Trade accounts receivable amounting to €8,189 million (2016: €10,954 million) were not individually impaired. Of this amount, €1,440 million (2016: €1,161 million) was past due or due immediately on the closing date.

The amounts of impaired and past-due trade accounts receivable are summarized in the following table:

B 22/3

Impaired and Past-Due Trade Accounts Receivable

		Of which neither impaired nor past due at the closing date	Of which unimpaired but past due at the closing date				Of which impaired at the closing date
Carrying amount	**€ million**		**up to 3 months**	**3 – 6 months**	**6 – 12 months**	**more than 12 months**	
December 31, 2017	8,582	6,749	934	142	104	260	393
December 31, 2016	10,969	9,793	780	162	125	94	15

The gross carrying amount of individually impaired trade accounts receivable was €798 million (2016: €192 million). The impairment losses recognized on these assets totaled €405 million (2016: €177 million), resulting in a net carrying amount of €393 million (2016: €15 million).

The unimpaired receivables were deemed to be collectible on the basis of established credit management processes and individual assessments of customer risks. Recognized impairment losses included an appropriate allowance for the default risk as of the end of the reporting period.

Receivables from government health service institutions, especially in Greece, Italy, Portugal and Spain, are under special observation in view of the government debt crisis. Although there were no material defaults on such receivables in 2017 or 2016, it is possible that future developments in these countries could result in payment delays and / or defaults. This could necessitate the recognition of impairment losses due to new occurrences. Trade accounts receivable from government health service institutions in the above countries at the end of 2017 totaled €102 million (2016: €134 million).

An excess-of-loss policy exists for the Pharmaceuticals, Consumer Health and Animal Health segments as part of a global credit insurance program. More than 80% of the receivables of these segments are insured up to a maximum total annual compensation payment of €150 million (2016: €150 million). A global excess-of-loss policy has also existed for the Crop Science segment since January 2016. In this global credit insurance program, more than 80% of this segment's receivables are insured up to a maximum total annual compensation payment of €300 million (2016: €300 million).

A further €696 million (2016: €743 million) of receivables was secured by advance payments, letters of credit or guarantees or by liens on land, buildings or harvest yields.

23. Other receivables

Other receivables were comprised as follows:

B 23/1

Other Receivables

	Dec. 31, 2016		Dec. 31, 2017	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
Other tax receivables	764	746	554	541
Deferred charges	549	358	298	192
Reimbursement claims	120	104	85	71
Net defined benefit asset	26	–	36	–
Receivables from employees	50	49	47	46
Miscellaneous receivables	1,284	953	656	426
Total	**2,793**	**2,210**	**1,676**	**1,276**

The reimbursement claims of €85 million (2016: €120 million) predominantly consisted of receivables from insurance companies in connection with product liability claims.

In 2016, miscellaneous receivables included a €441 million receivable from Dow AgroSciences LLC, United States, for damages and royalty payments resulting from the infringement of Bayer's rights to the LibertyLink™ weed control system. This receivable was settled in May 2017.

Other receivables included €426 million (2016: €690 million) in financial receivables. Of this amount, receivables of €383 million (2016: €612 million) were neither impaired nor past due. Receivables of €26 million (2016: €50 million) were due immediately or up to three months past due. Receivables of €17 million (2016: €27 million) were more than three months past due.

Other receivables are stated net of impairment losses of €70 million (2016: €56 million), of which €67 million (2016: €52 million) related to a receivable from the Venezuelan exchange control authority reflecting the right to receive U.S. dollars at a preferential rate.

24. Equity

The foremost objectives of our financial management are to help bring about a sustained increase in Bayer's value for the benefit of all stakeholders, and to ensure the Group's creditworthiness and liquidity. The pursuit of these goals means reducing our cost of capital, optimizing our capital structure, improving our financing cash flow and effectively managing risk.

The rating agencies commissioned by Bayer assess Bayer's creditworthiness as follows:

B 24/1

Rating

	Long-term rating	Short-term rating
S&P Global Ratings	A-	A-2
Moody's	A3	P-2

These credit ratings reflect the company's high solvency and ensure access to a broad investor base for financing purposes. As a result of the agreed acquisition of Monsanto, both S & P Global Ratings and Moody's are reviewing the possibility of downgrade. Bayer will continue to target an investment-grade rating after the successful closing of the Monsanto acquisition. We remain committed to the single "A" credit rating category over the long term.

Apart from utilizing cash inflows from our operating business to reduce net financial debt, we are implementing our financial strategy by way of vehicles such as the subordinated hybrid bonds issued in July 2014 and April 2015, the mandatory convertible notes issued in November 2016, the authorized and conditional capital, and a potential share buyback program.

The changes in the various components of equity during 2016 and 2017 are shown in the consolidated statements of changes in equity.

Capital stock

The capital stock of Bayer AG on December 31, 2017, amounted to €2,117 million (2016: €2,117 million), divided into 826,947,808 (2016: 826,947,808) registered no-par shares, and was fully paid in. Each no-par share confers one voting right.

Authorized and conditional capital

The authorized and conditional capital was comprised as follows:

B 24/2

Authorized and Conditional Capital

Capital	Resolution	Amount / shares	Expires	Purpose
Authorized capital I	April 29, 2014	€530 million	April 28, 2019	Increase the capital stock by issuing new no-par shares against cash contributions and / or contributions in kind, the latter not to exceed €423 million
Authorized capital II	April 29, 2014	€212 million	April 28, 2019	Increase the capital stock by issuing new no-par shares against cash contributions
Conditional capital	April 29, 2014	€212 million / up to 82,694,750 no-par shares	April 28, 2019	Increase the capital stock by granting no-par shares to the holders of bonds with warrants or convertible notes, profit participation certificates or income bonds; the authorizations to issue such instruments are limited to a total nominal amount of €6 billion.

Capital increases are effected by issuing new registered no-par shares. Stockholders must normally be granted subscription rights. However, subscription rights may be excluded under certain conditions stated in the authorization resolutions. Absent a further resolution of the Annual Stockholders' Meeting on the exclusion of stockholders' subscription rights, the Board of Management may only use the existing authorizations to increase the capital stock out of the authorized capital I and II or the conditional capital – while excluding stockholders' subscription rights – up to a total amount of 20% of the capital stock that existed when the respective resolutions were adopted by the Annual Stockholders' Meeting on April 29, 2014. All issuances or sales of no-par shares or of bonds with warrants or conversion rights or obligations that are effected while excluding stockholders' subscription rights also count toward this 20% limit. Details of the authorized and conditional capital are provided in the Notice of the Annual Stockholders' Meeting of April 29, 2014, and on the Bayer website. The authorized capital I and the authorized capital II have not been utilized so far.

On November 22, 2016, Bayer placed mandatory convertible notes in the amount of €4,000 million without granting subscription rights to existing stockholders of the company. The notes, denominated in units of €100,000, were issued by Bayer Capital Corporation B.V. under the subordinated guarantee of Bayer AG. At maturity, the outstanding amount of the notes will be mandatorily converted into registered no-par shares of Bayer AG. After deduction of €48 million in transaction costs and recognition of €191 million in deferred taxes, €3,491 million were allocated to capital reserves and €652 million to financial liabilities. The deferred taxes result from temporary differences in accounting for the liability component and were recognized outside profit or loss in equity. As at December 31, 2017, the financial liability had decreased by €125 million, resulting in a €41 million deferred tax reversal through profit or loss. The issuance of the mandatory convertible notes constitutes a utilization of the conditional capital.

Accumulated comprehensive income

Accumulated comprehensive income comprises retained earnings and accumulated other comprehensive income. The retained earnings comprise prior years' undistributed income of consolidated companies and all remeasurements of the net defined benefit liability for pension or other post-employment benefits that are recognized outside profit or loss. The accumulated other comprehensive income comprises exchange differences, the changes in fair values of cash flow hedges and available-for-sale financial assets, and the revaluation surplus. In 2017, an amount of €4 million (2016: €4 million) corresponding to the annual amortization / depreciation of the respective assets was transferred from the revaluation surplus to retained earnings.

Dividend

Under the German Stock Corporation Act (AktG), the dividend payment is determined by the distributable profit reported in the annual financial statements of Bayer AG, which are prepared according to the German Commercial Code. Retained earnings were diminished by payment of the dividend of €2.70 per share for 2016. The proposed dividend for the 2017 fiscal year is €2.80 per share, which – based on the current number of shares – would result in a total dividend payment of €2,315 million. Payment of the proposed dividend is contingent upon approval by the stockholders at the Annual Stockholders' Meeting and therefore is not recognized as a liability in the consolidated financial statements.

Noncontrolling interest

The changes in noncontrolling interest in equity during 2016 and 2017 are shown in the following table:

B 24/3

Changes in Noncontrolling Interest in Equity

€ million	2016	2017
January 1	**1,180**	**1,564**
Changes in equity not recognized in profit or loss		
Remeasurements of the net liability under defined benefit pension plans	(27)	49
Changes in fair value of cash flow hedges	–	–
Changes in fair value of securities	–	–
Exchange differences on translation of operations outside the eurozone	17	(155)
Other changes in equity	157	(2,025)
Dividend payments	(58)	(131)
Income after income taxes	**295**	**758**
December 31	**1,564**	**60**

Of the dividend payments, €129 million pertained to the noncontrolling interest in the equity of Covestro AG.

The principal subsidiary with third-party noncontrolling interest holders is Bayer CropScience Limited, India. The interest and share of voting rights attributable to noncontrolling interest amounted to 31.3% as at December 31, 2017 (December 31, 2016: 31.4%), and the equity attributable to this noncontrolling interest stood at €52 million (2016: €85 million).

During fiscal 2017, Bayer AG reduced its interest in Covestro AG from 64.2% to 24.6%. In the first quarter, Bayer sold 22 million shares of Covestro AG to institutional investors at a price of €66.50 per share. A further 17.25 million shares of Covestro AG were sold to institutional investors in the second quarter at a price of €62.25 per share. Further, 8 million shares of Covestro AG were deposited in Bayer Pension Trust e. V. at a price of €63.04 per share. In the third quarter of 2017, Bayer AG sold shares 19 million shares in Covestro AG at a price of €63.25 per share on September 12, 2017, and approximately 14 million Covestro AG shares at a price of €71.72 on September 29, 2017. The buyers of the around 14 million shares sold on September 29, 2017 agreed to be bound by a lock-up arrangement pursuant to which they would not sell the shares they purchased until at least December 11, 2017. Under the contractual agreement, Bayer retained the economic exposure to the price of these shares at least until that date.

The reductions in Bayer's interest through September 12, 2017, detailed above had a €4.2 billion positive effect on Bayer Group equity, which was recognized in other changes in equity. Of this amount, €2.7 billion was attributable to stockholders of Bayer AG and €1.5 billion to noncontrolling interest. As part of the deconsolidation at the end of September 2017, the noncontrolling interest in Covestro AG equity was derecognized in its entirety. See Note [6.3] for details on the deconsolidation of Covestro.

As of December 31, 2017, Bayer held 24.6% of the shares of Covestro AG. Bayer Pension Trust e.V. held a further 8.9%.

25. Provisions for pensions and other post-employment benefits

Provisions were established for defined benefit obligations pertaining to pensions and other post-employment benefits. The net liability was accounted for as follows:

B 25/1

Net Defined Benefit Liability Reflected in the Statement of Financial Position

	Pensions		Other post-employment benefits		Total	
€ million	Dec. 31, 2016	Dec. 31, 2017	Dec. 31, 2016	Dec. 31, 2017	Dec. 31, 2016	Dec. 31, 2017
Provisions for pensions and other post-employment benefits (net liability)	**10,736**	**7,798**	**398**	**222**	**11,134**	**8,020**
of which Germany	9,176	6,778	–	–	9,176	6,778
of which other countries	1,560	1,020	398	222	1,958	1,242
Net defined benefit asset	**25**	**36**	**1**	**–**	**26**	**36**
of which Germany	23	22	–	–	23	22
of which other countries	2	14	1	–	3	14
Net defined benefit liability	**10,711**	**7,762**	**397**	**222**	**11,108**	**7,984**
of which Germany	9,153	6,756	–	–	9,153	6,756
of which other countries	1,558	1,006	397	222	1,955	1,228

The deconsolidation of Covestro reduced provisions for pensions and other post-employment benefits by €1,201 million.

The expenses for defined benefit plans for pensions and other post-employment benefits comprised the following components:

B 25/2

Expenses for Defined Benefit Plans

	Pension plans						Other post-employment benefit plans	
	Germany		Other countries		Total		Other countries	
€ million	2016	2017	2016	2017	2016	2017	2016	2017
Current service cost	281	312	86	93	367	405	14	13
Past service cost	17	20	(4)	(3)	13	17	(1)	(2)
of which plan curtailments	–	–	1	(2)	1	(2)	–	(2)
Plan settlements	–	–	(8)	8	(8)	8	–	–
Plan administration cost paid out of plan assets	3	3	1	1	4	4	–	–
Net interest	175	135	46	43	221	178	14	13
Total	**476**	**470**	**121**	**142**	**597**	**612**	**27**	**24**

2016 figures restated

In addition, a total of €1,236 million in effects of remeasurements of the net defined benefit liability was recognized in 2017 outside profit or loss (2016: minus €1,036 million). Of this amount, €1,223 million (2016: minus €1,063 million) related to pension obligations, €1 million (2016: €34 million) to other post-employment benefit obligations, and €12 million (2016: minus €7 million) to the effects of the asset ceiling.

The net defined benefit liability developed as follows:

B 25/3

Changes in Net Defined Benefit Liability

€ million	Defined benefit obligation	Fair value of plan assets	Effects of the asset ceiling	Net defined benefit liability
Germany				
January 1, 2017	**(20,962)**	**11,809**	–	**(9,153)**
Acquisitions	–	–	–	–
Divestments / changes in the scope of consolidation	3,021	(2,075)	–	946
Current service cost	(368)			(368)
Past service cost	(32)			(32)
Net interest	(358)	208	–	(150)
Net actuarial gain / (loss)	206			206
of which due to changes in financial assumptions	180			180
of which due to changes in demographic assumptions	(1)			(1)
of which due to experience adjustments	27			27
Return on plan assets excluding amounts recognized as interest income		755		755
Employer contributions		593		593
Employee contributions	(39)	39		–
Payments due to plan settlements	–	–		–
Benefits paid out of plan assets	216	(216)		–
Benefits paid by the company	441			441
Plan administration cost paid from plan assets		(3)		(3)
Reclassification to current assets / liabilities held for sale	38	(29)		9
December 31, 2017	**(17,837)**	**11,081**	–	**(6,756)**
Other countries				
January 1, 2017	**(8,033)**	**6,127**	**(49)**	**(1,955)**
Acquisitions	–	–	–	–
Divestments / changes in the scope of consolidation	840	(589)	3	254
Current service cost	(109)			(109)
Past service cost	8			8
Gains / (losses) from plan settlements	(8)			(8)
Net interest	(244)	183	(3)	(64)
Net actuarial gain / (loss)	(166)			(166)
of which due to changes in financial assumptions	(191)			(191)
of which due to changes in demographic assumptions	21			21
of which due to experience adjustments	4			4
Return on plan assets excluding amounts recognized as interest income		429		429
Remeasurement of asset ceiling			12	12
Employer contributions		125		125
Employee contributions	(14)	14		–
Payments due to plan settlements	32	(41)		(9)
Benefits paid out of plan assets	300	(300)		–
Benefits paid by the company	94			94
Plan administration costs paid out of plan assets		(1)		(1)
Reclassification to current assets / liabilities held for sale	10	(8)	–	2
Exchange differences	635	(481)	6	160
December 31, 2017	**(6,655)**	**5,458**	**(31)**	**(1,228)**
of which other post-employment benefits	(671)	449	–	(222)
Total, December 31, 2017	**(24,492)**	**16,539**	**(31)**	**(7,984)**

Covestro is included in the net defined benefit liability.

B 25/4

Changes in Net Defined Benefit Liability (Previous Year)

€ million	Defined benefit obligation	Fair value of plan assets	Effects of the asset ceiling	Net defined benefit liability
Germany				
January 1, 2016	**(19,148)**	**10,199**	**–**	**(8,949)**
Acquisitions	–	–	–	–
Divestments / changes in the scope of consolidation	4	(2)	–	2
Current service cost	(350)			(350)
Past service cost	(26)			(26)
Net interest	(452)	248	–	(204)
Net actuarial gain / (loss)	(1,610)			(1,610)
of which due to changes in financial assumptions	(1,563)			(1,563)
of which due to changes in demographic assumptions	(1)			(1)
of which due to experience adjustments	(46)			(46)
Return on plan assets excluding amounts recognized as interest income		669		669
Employer contributions		878		878
Employee contributions	(39)	39		–
Payments due to plan settlements	–	–		–
Benefits paid out of plan assets	219	(219)		–
Benefits paid by the company	440			440
Plan administration cost paid from plan assets		(3)		(3)
Reclassification to current assets / liabilities held for sale	–	–		–
December 31, 2016	**(20,962)**	**11,809**	**–**	**(9,153)**
Other countries				
January 1, 2016	**(7,660)**	**5,799**	**(32)**	**(1,893)**
Acquisitions	–	1	–	1
Divestments / changes in the scope of consolidation	4	(3)	–	1
Current service cost	(118)			(118)
Past service cost	6			6
Gains / (losses) from plan settlements	9			9
Net interest	(284)	215	(3)	(72)
Net actuarial gain / (loss)	(515)			(515)
of which due to changes in financial assumptions	(650)			(650)
of which due to changes in demographic assumptions	89			89
of which due to experience adjustments	46			46
Return on plan assets excluding amounts recognized as interest income		427		427
Remeasurement of asset ceiling			(7)	(7)
Employer contributions		152		152
Employee contributions	(12)	12		–
Payments due to plan settlements	83	(84)		(1)
Benefits paid out of plan assets	295	(295)		–
Benefits paid by the company	87			87
Plan administration costs paid out of plan assets		(1)		(1)
Reclassification to current assets / liabilities held for sale	–	–	–	–
Exchange differences	72	(96)	(7)	(31)
December 31, 2016	**(8,033)**	**6,127**	**(49)**	**(1,955)**
of which other post-employment benefits	(867)	471	–	(396)
Total, December 31, 2016	**(28,995)**	**17,936**	**(49)**	**(11,108)**

Covestro is included in the net defined benefit liability.

The benefit obligations pertained mainly to Germany (73%; 2016: 72%), the United States (12%; 2016: 14%) and the United Kingdom (8%; 2016: 7%). In Germany, current employees accounted for about 43% (2016: 46%), retirees or their surviving dependents for about 50% (2016: 47%) and former employees with vested pension rights for about 7% (2016: 7%) of entitlements under defined benefit plans. In the

United States, current employees accounted for about 21% (2016: 25%), retirees or their surviving dependents for about 65% (2016: 53%) and former employees with vested pension rights for about 14% (2016: 22%) of entitlements under defined benefit plans.

The actual return on the assets of defined benefit plans for pensions or other post-employment benefits amounted to €1,517 million (2016: €1,519 million) and €58 million (2016: €40 million), respectively.

The following table shows the defined benefit obligations for pensions and other post-employment benefits along with the funded status of the funded obligations.

B 25/5

Defined Benefit Obligation and Funded Status

	Pension obligation		Other post-employment benefit obligation		Total	
€ million	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Defined benefit obligation	**28,128**	**23,821**	**867**	**671**	**28,995**	**24,492**
of which unfunded	1,231	1,117	125	64	1,356	1,181
of which funded	26,897	22,704	742	607	27,639	23,311
Funded status of funded obligations						
Overfunding	74	67	1	–	75	67
Underfunding	9,506	6,681	272	158	9,778	6,839

Pension and other post-employment benefit obligations

Group companies provide retirement benefits for most of their employees, either directly or by contributing to privately or publicly administered funds. The benefits vary depending on the legal, fiscal and economic conditions of each country. The obligations relate both to existing retirees' pensions and to pension entitlements of future retirees.

Bayer has set up funded pension plans for its employees in various countries. The most appropriate investment strategy is determined for each defined benefit pension plan based on the risk structure of the obligations (especially demographics, the current funded status, the structure of the expected future cash flows, interest sensitivity, biometric risks etc.), the regulatory environment and the existing level of risk tolerance or risk capacity. A strategic target investment portfolio is then developed in line with the plan's risk structure, taking capital market factors into consideration. Further determinants are risk diversification, portfolio efficiency and the need for both a country-specific and a global risk / return profile centered on ensuring the payment of all future benefits. As the capital investment strategy for each pension plan is developed individually in light of the plan-specific conditions listed above, the investment strategies for different pension plans may vary considerably. The investment strategies are generally aligned less toward maximizing absolute returns and more toward the maximum probability of being able to finance pension commitments over the long term. For pension plans, stress scenarios are simulated and other risk analyses (such as value at risk) undertaken with the aid of risk management systems.

Bayer-Pensionskasse VVaG (Bayer-Pensionskasse), Leverkusen, Germany, is by far the most significant of the pension plans. It has been closed to new members since 2005. This legally independent fund is regarded as a life insurance company and therefore is subject to the German Insurance Supervision Act. The benefit obligations covered by Bayer-Pensionskasse comprise retirement, surviving dependents' and disability pensions. It constitutes a multi-employer plan, to which the active members and their employers contribute. The company contribution is a certain percentage of the employee contribution. This percentage is the same for all participating employers, including those outside the Bayer Group, and is set by agreement between the plan's executive committee and its supervisory board, acting on a proposal from the responsible actuary. It takes into account the differences between the actuarial estimates and the actual values for the factors used to determine liabilities and contributions. Bayer may also adjust the company contribution in agreement with the plan's executive committee and its supervisory board, acting on a proposal from the responsible actuary. The plan's liability is governed by Section 1, Paragraph 1, Sentence

3 of the German Law on the Improvement of Occupational Pensions. This means that if the pension plan exercises its right under the articles of association to reduce benefits, each participating employer has to make up the resulting difference. Bayer is not liable for the obligations of participating employers outside the Bayer Group, even if they cease to participate in the plan.

Pension entitlements for people who joined Bayer in Germany in 2005 or later are granted via Rheinische Pensionskasse VVaG, Leverkusen. Future pension payments from this plan are based on contributions and the return on plan assets; a guaranteed interest rate applies.

Another important pension provision vehicle is Bayer Pension Trust e. V. (BPT). This covers further retirement provision arrangements of the Bayer Group, such as deferred compensation, pension obligations previously administered by Schering Altersversorgung Treuhand e. V., and components of other direct commitments.

The defined benefit pension plans in the United States have been frozen for some years, and no significant new entitlements can be earned under these plans. The assets of all the U.S. pension plans are held by a master trust for reasons of efficiency. The applicable regulatory framework is based on the Employee Retirement Income Security Act (ERISA), which includes a statutory 80% minimum funding requirement to avoid benefit restrictions. The actuarial risks, such as investment risk, interest-rate risk and longevity risk, remain with the company.

The defined benefit pension plans in the United Kingdom have been closed to new members for some years. Plan assets in the U.K. are administered by independent trustees, who are legally obligated to act solely in the interests of the beneficiaries. A technical assessment is performed every three years in line with U.K. regulations. This serves as the basis for developing a plan to cover any potential financing requirements. Here, too, the actuarial risks remain with the company.

The other post-employment benefit obligations outside Germany mainly comprised health care benefit payments for retirees in the United States.

The fair value of the plan assets to cover pension and other post-employment benefit obligations was as follows:

B 25/6

Fair Value of Plan Assets as of December 31

	Pension obligations				Other post-employment obligations	
	Germany		Other countries		Other countries	
€ million	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Plan assets based on quoted prices in active markets						
Real estate and special real estate funds	–	–	215	181	22	16
Equities and equity funds	2,919	3,617	1,861	1,739	149	158
Callable debt instruments	–	–	263	27	–	–
Noncallable debt instruments	556	–	736	602	128	127
Bond funds	3,754	3,737	1,823	1,631	104	94
Derivatives	11	11	(3)	–	–	–
Cash and cash equivalents	243	164	114	74	17	13
Other	–	–	6	–	–	–
	7,483	**7,529**	**5,015**	**4,254**	**420**	**408**
Plan assets for which quoted prices in active markets are not available						
Real estate and special real estate funds	563	496	124	179	–	–
Equities and equity funds	115	121	72	71	–	–
Callable debt instruments	1,525	1,399	–	–	–	–
Noncallable debt instruments	1,870	1,394	–	–	–	–
Bond funds	–	–	72	74	–	–
Derivatives	1	–	–	–	–	–
Other	252	142	373	431	51	41
	4,326	**3,552**	**641**	**755**	**51**	**41**
Total plan assets	**11,809**	**11,081**	**5,656**	**5,009**	**471**	**449**

The fair value of plan assets in Germany included real estate leased by Group companies, recognized at a fair value of €82 million (2016: €82 million), and Bayer AG shares and bonds held through investment funds, recognized at their fair values of €37 million (2016: €41 million) and €3 million (2016: €3 million), respectively.

In 2017, Bayer AG deposited 8 million (2016: 10 million) shares it held in Covestro AG with BPT. The market value of BPT's total shareholding in Covestro AG amounted to €1,549 million as of December 31, 2017 (2016: €652 million). In 2016, Covestro deposited short-term securities totaling €450 million with Metzler Trust e. V.

The other plan assets comprised mortgage loans granted, other receivables and qualified insurance policies.

Risks

The risks from defined benefit plans arise partly from the defined benefit obligations and partly from the investment in plan assets. These risks include the possibility that additional contributions will have to be made to plan assets in order to meet current and future pension obligations, and negative effects on provisions and equity.

Demographic/biometric risks

Since a large proportion of the defined benefit obligations comprises lifelong pensions or surviving dependents' pensions, longer claim periods or earlier claims may result in higher benefit obligations, higher benefit expense and/or higher pension payments than previously anticipated.

Investment risks

If the actual return on plan assets were below the return anticipated on the basis of the discount rate, the net defined benefit liability would increase, assuming there were no changes in other parameters. This could happen as a result of a drop in share prices, increases in market rates of interest, default of individual debtors or the purchase of low-risk but low-interest bonds, for example.

Interest-rate risk

A decline in capital market interest rates, especially for high-quality corporate bonds, would increase the defined benefit obligation. This effect would be at least partially offset by the ensuing increase in the market values of the debt instruments held.

Measurement parameters and their sensitivities

The following weighted parameters were used to measure the obligations for pensions and other post-employment benefits as of December 31 of the respective year:

B 25/7

Parameters for Benefit Obligations

	Germany		Other countries		Total	
%	2016	2017	2016	2017	2016	2017
Pension obligations						
Discount rate	1.80	1.90	3.25	2.95	2.15	2.15
of which U.S.A			3.70	3.40	3.70	3.40
of which U.K.			2.65	2.50	2.65	2.50
Projected future salary increases	2.75	2.75	3.50	3.60	2.95	2.95
Projected future benefit increases	1.50	1.70	3.35	3.25	1.95	2.10
Other post-employment benefit obligations						
Discount rate	–	–	4.35	4.25	4.35	4.25

The data selection criteria used to determine the discount rate in the eurozone were modified starting in the third quarter of 2017 in connection with the deconsolidation of Covestro. As before, the underlying bond portfolio consists entirely of high-quality corporate bonds with a minimum AA or AAA rating. It no longer contains corporate bonds issued by government-owned entities. The bond portfolio includes corporate bonds of special-purpose entities and exchange-traded corporate bonds. Without these modifications, the interest rate as of December 31, 2017, would have been 20 basis points lower. Provisions for pensions would therefore have been €0.6 billion higher.

In Germany the Heubeck 2005 G mortality tables were used, in the United States the RP-2014 Mortality Tables, and in the United Kingdom 95% of S1NXA.

The following weighted parameters were used to measure the expense for pension and other post-employment benefits in the respective year:

B 25/8

Parameters for Benefit Expense

	Germany		Other countries		Total	
%	2016	2017	2016	2017	2016	2017
Pension obligations						
Discount rate	2.40	1.80	3.85	3.25	2.75	2.15
Projected future salary increases	3.00	2.75	3.35	3.50	3.10	2.95
Projected future benefit increases	1.75	1.50	3.20	3.35	2.15	1.95
Other post-employment benefit obligations						
Discount rate	–	–	4.45	4.35	4.45	4.35

The parameter sensitivities were computed by expert actuaries based on a detailed evaluation similar to that performed to obtain the data presented in Table B 25/3. Altering individual parameters by 0.5 percentage points (mortality by 10% per beneficiary) while leaving the other parameters unchanged would have impacted pension and other post-employment benefit obligations as of year-end 2017 as follows:

B 25/9

Sensitivity of Benefit Obligations

	Germany		Other countries		Total	
€ million	Increase	Decrease	Increase	Decrease	Increase	Decrease
Pension obligations						
0.5%-pt. change in discount rate	(1,417)	1,620	(414)	468	(1,831)	2,088
0.5%-pt. change in projected future salary increases	87	(82)	50	(47)	137	(129)
0.5%-pt. change in projected future benefit increases	921	(841)	146	(110)	1,067	(951)
10% change in mortality	(587)	660	(172)	176	(759)	836
Other post-employment benefit obligations						
0.5%-pt. change in discount rate	–	–	(36)	39	(36)	39
10% change in mortality	–	–	(20)	22	(20)	22

B 25/10

Sensitivity of Benefit Obligations (prior year)

	Germany		Other countries		Total	
€ million	Increase	Decrease	Increase	Decrease	Increase	Decrease
Pension obligations						
0.5%-pt. change in discount rate	(1,752)	2,014	(478)	539	(2,230)	2,553
0.5%-pt. change in projected future salary increases	135	(125)	50	(47)	185	(172)
0.5%-pt. change in projected future benefit increases	1,107	(1,009)	139	(94)	1,246	(1,103)
10% change in mortality	(670)	752	(195)	209	(865)	961
Other post-employment benefit obligations						
0.5%-pt. change in discount rate	–	–	(48)	53	(48)	53
10% change in mortality	–	–	(24)	27	(24)	27

Provisions are also set up for the obligations, mainly of U.S. subsidiaries, to provide post-employment benefits in the form of health care cost payments for retirees. The valuation of health care costs was based on the assumption that they will increase at a rate of 6.5% (2016: 6.8%), which should gradually decline to 5.0% by 2023 (assumption in 2016: gradually decline to 5.0% by 2023). The following table shows the impact on other post-employment benefit obligations and total benefit expense of a one-percentage-point change in the assumed cost increase rates:

B 25/11

Sensitivity to Health Care Cost Increases

€ million	Increase of one percentage point		Decrease of one percentage point	
	2016	**2017**	**2016**	**2017**
Impact on other post-employment benefit obligations	77	55	(66)	(47)
Impact on benefit expense	4	3	(3)	(3)

Payments made and expected future payments

The following payments or asset contributions correspond to the employer contributions made or expected to be made to funded benefit plans:

B 25/12

Employer Contributions Paid or Expected

€ million	Germany			Other countries		
	2016	**2017**	**2018 expected**	**2016**	**2017**	**2018 expected**
Pension obligations	878	593	42	151	146	104
Other post-employment benefit obligations	–	–	–	1	(21)	1
Total	**878**	**593**	**42**	**152**	**125**	**105**

Bayer has currently committed to make deficit contributions for its U.K. pension plans of approximately GBP 16 million annually through 2019. For its U.S. pension plans, Bayer made payments of US$50 million in 2017 and expects to make payments of US$50 million in 2018, the latter amount being subject to change depending on future circumstances.

Pensions and other post-employment benefits payable in the future from funded and unfunded plans are estimated as follows:

B 25/13

Future Benefit Payments

€ million	Payments out of plan assets				Payments by the company			
	Pensions		Other post-employment benefits		Pensions		Other post-employment benefits	
	Germany	**Other countries**	**Other countries**	**Total**	**Germany**	**Other countries**	**Other countries**	**Total**
2018	203	247	22	472	434	69	14	517
2019	205	247	23	475	439	66	16	521
2020	208	251	23	482	443	70	17	530
2021	211	259	24	494	449	77	18	544
2022	216	261	25	502	454	78	18	550
2023-2027	1,135	1,363	128	2,626	2,311	415	110	2,836

The weighted average term of the pension obligations is 17.0 years (2016: 18.0 years) in Germany and 13.8 years (2016: 13.3 years) in other countries. The weighted average term of the obligations for other post-employment benefits in other countries is 11.5 years (2016: 11.5 years).

26. Other provisions

Changes in the various provision categories in 2017 were as follows:

B 26/1

Changes in Other Provisions

€ million	Other Taxes	Environmental protection	Restructuring	Trade-related commitments	Litigations	Personnel commitments	Miscellaneous	Total
December 31, 2016	**41**	**321**	**276**	**2,375**	**512**	**3,290**	**386**	**7,201**
Divestments / changes in the scope of consolidation	(6)	(44)	(56)	(88)	(7)	(552)	(25)	(778)
Additions	19	34	103	5,440	172	2,706	332	8,806
Utilization	(18)	(32)	(101)	(4,423)	(199)	(2,720)	(255)	(7,748)
Reversal	(5)	(14)	(37)	(567)	(47)	(589)	(61)	(1,320)
Reclassification to current liabilities	–	–	–	(11)	–	(2)	–	(13)
Interest cost	–	(2)	–	–	–	7	–	5
Exchange differences	(2)	(20)	(14)	(245)	(38)	(102)	(22)	(443)
December 31, 2017	**29**	**243**	**171**	**2,481**	**393**	**2,038**	**355**	**5,710**

The provisions recognized in the statement of financial position as of December 31, 2017, were expected to be utilized as follows:

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Expected Utilization of Other Provisions

€ million	Other Taxes	Environmental protection	Restructuring	Trade-related commitments	Litigations	Personnel commitments	Miscellaneous	Total
2018	12	69	109	2,313	258	1,334	249	4,344
2019	–	13	29	147	65	59	3	316
2020	–	8	11	9	2	187	2	219
2021	–	7	6	2	3	159	1	178
2022	–	2	4	2	6	40	5	59
2023 or later	17	144	12	8	59	259	95	594
Total	**29**	**243**	**171**	**2,481**	**393**	**2,038**	**355**	**5,710**

The provisions were partly offset by claims for refunds in the amount of €74 million (2016: €110 million), which were recognized as receivables. These claims predominantly related to product liability.

Restructuring

Provisions for restructuring included €116 million (2016: €179 million) for severance payments and €55 million (2016: €97 million) for other restructuring expenses, which mainly comprised other costs related to the closure of production facilities.

In the Pharmaceuticals segment, restructuring took place mainly in the areas of marketing and supply network optimization as part of the Continuous Efficiency Program. In 2017, further use was made of the restructuring provisions established for this program in previous years, primarily in Japan, France and the United States. Provisions for the above and other restructuring measures in Pharmaceuticals as of December 31, 2017, totaled €45 million. Of this amount, severance payments accounted for €44 million and other restructuring expenses for €1 million.

In the Consumer Health segment, restructuring took place mainly in France, Germany and Italy. The restructuring measures in France and in Italy related to distribution, and in Germany to the discontinuation of contract manufacturing of medical products for third parties. Provisions for restructuring in this segment totaled €33 million as of December 31, 2017, with severance payments accounting for the entire amount.

In the Crop Science segment, provisions were established for the planned restructuring of the site in Institute, West Virginia, United States, to prepare for the termination of thiodicarb production. The restructuring measures initiated in connection with the "Advancing our Leadership Strategy" program to improve customer centricity, innovation and efficiency continued to be implemented. Restructuring provisions for the above and other measures at Crop Science as of December 31, 2017, totaled €73 million. Of this amount, severance payments accounted for €21 million and other restructuring expenses for €52 million.

Provisions for restructuring in the Animal Health segment as of December 31, 2017, totaled €6 million. Of this amount, severance payments accounted for €5 million and other restructuring expenses for €1 million.

In "All Other Segments," provisions were established for the relocation of a shared service center in China from Shanghai to Dalian. In addition, the provisions established in past years were utilized to implement planned restructuring measures to enhance efficiency. The restructuring provisions totaled €14 million as of December 31, 2017. Of this amount, severance payments accounted for €13 million and other restructuring expenses for €1 million.

Litigations

The legal risks currently considered to be material, and their development, are described in Note [32].

Personnel commitments

Stock-based compensation programs

Bayer offers stock-based compensation programs collectively to different groups of employees. As required by IFRS 2 (Share-based Payment) for compensation systems involving cash settlement, awards to be made under the stock-based programs are covered by provisions in the amount of the fair value of the obligations existing as of the date of the financial statements vis-à-vis the respective employee group. All resulting valuation adjustments are recognized in profit or loss.

The following table shows the changes in provisions for the various programs:

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Changes in Provisions for Stock-Based Compensation Programs

€ million	Aspire I	Aspire II	Aspire 2.0	Aspire I Covestro	Aspire II Covestro	Covestro Prisma	Total
December 31, 2016	**61**	**203**	**85**	**17**	**48**	**15**	**429**
Acquisitions / divestments	–	–	–	(7)	(22)	(27)	(56)
Additions	54	163	292	2	5	15	531
Utilization	(51)	(157)	–	(8)	(27)	–	(243)
Reversal	(56)	(167)	(98)	(3)	(3)	(1)	(328)
Exchange differences	(2)	(7)	(16)	(1)	(1)	(2)	(29)
December 31, 2017	**6**	**35**	**263**	**–**	**–**	**–**	**304**

The value of the Aspire tranches that were fully earned at the end of 2017, resulting in payments at the beginning of 2018, was €34 million (2016: €241 million).

The net expense for all stock-based compensation programs (excluding Covestro) was €194 million (2016: €87 million), including €5 million (2016: €5 million) for the BayShare stock participation program and expense of €1 million (2016: €1 million income) for grants of virtual Bayer shares.

The fair value of the obligations under the Aspire I, Aspire II and Aspire 2.0 programs (excluding Aspire programs for Covestro) was calculated using the Monte Carlo simulation method based on the following key parameters:

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Parameters for Monte Carlo Simulation

	2016	2017
Dividend yield	2.90%	2.46%
Risk-free interest rate	(0.67)%	(0.35)%
Volatility of Bayer stock	22.78%	15.49%
Volatility of EURO STOXX 50	11.66%	9.27%
Correlation between Bayer stock price and the EURO STOXX 50	0.67	0.71

Long-term incentive program for members of the Board of Management and other senior executives (Aspire I)

From 2005 through 2015, members of the Board of Management and other senior executives were entitled to participate in Aspire I on the condition that they purchased a certain number of Bayer shares – determined for each individual according to specific guidelines – and retained them for the full term of the program. A percentage of the executive's annual base salary – according to his or her position – was defined as a target for variable payments (Aspire target opportunity). Depending on the performance of Bayer stock, both in absolute terms and relative to the EURO STOXX 50 index over a four-year performance period, participants receive a payment of up to 300% of their individual Aspire target opportunity at the end of the period. The prices used to determine the amount of the payment are the averages of the official closing prices of Bayer shares over the last 30 stock-exchange trading days of the respective year. At the start of 2017, a payment of 270% was made for the tranche issued in 2013. A payment of 20% was made at the start of 2018 for the tranche issued in 2014.

Long-term incentive program for middle management (Aspire II)

From 2005 through 2015, other senior managers were offered Aspire II, which was similar to Aspire I but did not require a personal investment in Bayer shares. The amount of the payment is based entirely on the absolute performance of Bayer stock over a four-year period. The maximum payment is 250% of each manager's Aspire target opportunity. The prices used to determine the amount of the payment are the averages of the official closing prices of Bayer shares over the last 30 stock-exchange trading days of the respective year. At the start of 2017, a payment of 220% was made for the tranche issued in 2013. A payment of 40% was made at the start of 2018 for the tranche issued in 2014.

Long-term incentive program Aspire 2.0

Since 2016, Aspire has been offered to all eligible employees in a new, standardized format named Aspire 2.0. For the Board of Management, there is an additional hurdle in the form of a comparison between the performance of Bayer stock and that of the EURO STOXX 50. Each tranche runs for four years. Aspire 2.0 is also based on a percentage of each employee's annual base salary, the percentage varying according to his or her position. This target value is multiplied by the employee's STI payment factor for the previous year to give the Aspire grant value. The STI payment factor reflects the employee's individual performance and the business performance under the global short-term incentive program (STI). The Aspire grant value is converted into virtual Bayer shares by dividing it by the share price at the start of the program. The program's performance is based on these virtual shares. The fair value of the obligations is determined from the price of Bayer stock at year end and the dividends paid up to that time. The payment made at the end of each tranche is determined by multiplying the number of virtual shares by the Bayer share price at that time and adding an amount equivalent to the dividends paid during the period of the tranche. The maximum payment for Aspire 2.0 is 250% of the Aspire grant value.

BayShare 2017

All management levels and nonmanagerial employees are offered an annual stock participation program known as BayShare, under which Bayer subsidizes their personal investments in the company's stock. The discount under this program in 2017 was 20% (2016: 20%) of the subscription amount. Employees stated a fixed amount that they wished to invest in shares. The maximum subscription amount in Germany was set at €2,500 (2016: €2,500) or €5,000 (2016: €5,000), depending on the employee's position. These shares must be retained until December 31, 2018.

In 2017, employees purchased a total of about 229,000 shares (2016: 259,000 shares) under the BayShare program.

27. Financial liabilities

Financial liabilities were comprised as follows:

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Financial Liabilities

€ million	Dec. 31, 2016 Total	Dec. 31, 2016 Of which current	Dec. 31, 2017 Total	Dec. 31, 2017 Of which current
Bonds and notes/promissory notes	15,991	2,010	12,436	505
Liabilities to banks	1,837	820	534	513
Liabilities under finance leases	436	59	238	32
Liabilities from derivatives	587	309	240	221
Other financial liabilities	730	203	970	664
Total	**19,581**	**3,401**	**14,418**	**1,935**

The development of financial liabilities in 2017 is outlined in Note [35].

A breakdown of financial liabilities by contractual maturity is given below:

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Maturities of Financial Liabilities

€ million	**Dec. 31, 2016**
2017	3,401
2018	3,241
2019	2,456
2020	44
2021	2,714
2022 or later	7,725
Total	**19,581**

€ million	**Dec. 31, 2017**
2018	1,935
2019	2,155
2020	1,248
2021	2,096
2022	89
2023 or later	6,895
Total	**14,418**

In addition to promissory notes in the amount of €45 million (2016: €45 million), the Bayer Group has issued the following bonds and notes:

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Bonds and Notes

Effective interest rate	Stated rate		Nominal volume	Dec. 31, 2016 € million	Dec. 31, 2017 € million
		Bayer AG, Germany			
1.253%	1.125%	DIP bond 2014/2018[3]	EUR 750 million	749	–
5.774%	5.625%	DIP bond 2006/2018	GBP 250 million	292	281
5.541%	5.625%	DIP bond 2006/2018 (increase)	GBP 100 million	117	113
0.050%	0.050%	Exchangeable bond[4] 2017/2020	EUR 1,000 million	–	1,220
2.086%	1.875%	DIP bond 2014/2021	EUR 750 million	755	753
3.811%	3.750%	Hybrid bond 2014/2024[5]/2074	EUR 1,500 million	1,494	1,495
2.517%	2.375%	Hybrid bond 2015/2022[5]/2075	EUR 1,300 million	1,290	1,292
3.093%	3.000%	Hybrid bond 2014/2020[5]/2075	EUR 1,750 million	1,745	1,746
		Bayer Capital Corporation B.V., Netherlands			
1.333%	1.250%	DIP bond 2014/2023	EUR 500 million	497	498
6.061%	5.625%	Mandatory convertible notes[6] 2016/2019	EUR 4,000 million	–	–
		Bayer Corporation, U.S.A.			
6.670%	6.650%	Notes 1998/2028	US$ 350 million	351	307
		Bayer Holding Ltd., Japan			
0.858%	0.816%	DIP bond 2012/2017	JPY 30 billion	243	–
1.493%	1.459%	DIP bond 2010/2017	JPY 10 billion	81	–
3.654%	3.575%	DIP bond 2008/2018	JPY 15 billion	122	111
0.629%	0.594%	DIP bond 2013/2019	JPY 10 billion	81	74
0.270%	0.230%	DIP bond 2017/2021	JPY 10 billion	–	74
0.301%	0.260%	DIP bond 2017/2022	JPY 10 billion	–	74
		Bayer Nordic SE, Finland			
Floating[1]	Floating[1]	DIP bond 2014/2017	EUR 500 million	500	–
		Bayer U.S. Finance LLC, U.S.A.			
Floating[2]	Floating[2]	Notes 2014/2017	US$ 400 million	379	–
1.615%	1.500%	Notes 2014/2017	US$ 850 million	806	–
2.564%	2.375%	Notes 2014/2019	US$ 2,000 million	1,889	1,662
3.096%	3.000%	Notes 2014/2021	US$ 1,500 million	1,419	1,247
3.579%	3.375%	Notes 2014/2024	US$ 1,750 million	1,642	1,444
		Covestro AG, Germany			
Floating	Floating	DIP bond 2016/2018	EUR 500 million	500	–
1.076%	1.000%	DIP bond 2016/2021	EUR 500 million	497	–
1.782%	1.750%	DIP bond 2016/2024	EUR 500 million	497	–
		Total		**15,946**	**12,391**

[1] Floating-rate coupon comprising three-month EURIBOR plus 22 basis points
[2] Floating-rate coupon comprising three-month USD-LIBOR plus 28 basis points
[3] Bond was early redeemed in October 2017
[4] Bond can be redeemed in cash, Covestro shares or a combinaton thereof
[5] Date of first option to early redeem the bond at par
[6] The mandatory convertible notes were allocated to capital reserves and to other financial liabilities.

Debt Issuance Programme

An important means of external financing are the bonds issued under the Debt Issuance Programme (DIP).

Bayer Holding Ltd., Japan, issued two JPY 10 billion bonds under the DIP in May 2017.

Hybrid bonds

The hybrid bonds issued by Bayer AG are subordinated, and 50% of their amount is treated by Moody's and S & P Global Ratings as equity. They therefore have a more limited effect on the Group's rating-relevant debt indicators than senior borrowings.

Mandatory convertible notes

On November 22, 2016, Bayer Capital Corporation B.V. placed subordinated mandatory convertible notes in the amount of €4,000 million, which will be converted into no-par shares of Bayer AG at maturity. The notes represented the first part of the equity component of the financing for the planned acquisition of Monsanto. The mandatory convertible notes were recognized in capital reserves and other financial liabilities.

Exchangeable bond

On June 14, 2017, Bayer AG issued bonds with a nominal value of €1,000 million which mature in 2020. The issue price was 105.25 percent of the principal amount and the initial exchange price was fixed at €80.93. These bonds can be settled in cash, by delivery of Covestro shares or by a combination thereof at or prior to maturity. Applying the fair value option under IAS 39.11A, these debt instruments were designated as financial liabilities at fair value through profit or loss upon first-time recognition.

Bayer AG guarantees all the bonds issued by subsidiaries.

Lease liabilities

Lease payments totaling €365 million (2016: €609 million), including €127 million (2016: €173 million) in interest, are to be made under finance leases to the respective lessors in future years.

The liabilities under finance leases mature as follows:

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Lease Liabilities

€ million	Dec. 31, 2016			€ million	Dec. 31, 2017		
Maturity	**Lease payments**	**Interest component**	**Liabilities under finance leases**	**Maturity**	**Lease payments**	**Interest component**	**Liabilities under finance leases**
2017	88	29	59	2018	49	17	32
2018	76	24	52	2019	44	13	31
2019	68	21	47	2020	39	12	27
2020	59	17	42	2021	31	11	20
2021	57	15	42	2022	25	10	15
2022 or later	261	67	194	2023 or later	177	64	113
Total	**609**	**173**	**436**	**Total**	**365**	**127**	**238**

Other financial liabilities

Other financial liabilities as of December 31, 2017, comprised €525 million (2016: €652 million) relating to the mandatory convertible notes issued in November 2016, and €292 million (2016: €0 million) in commercial paper.

Other information

As of December 31, 2017, the Group had undrawn credit facilities at its disposal totaling €47 billion (2016: €55 billion), including €43 billion, or US$52 billion (2016: €50 billion, or US$53 billion), in bridge financing for the planned acquisition of Monsanto.

Further information on the accounting for liabilities from derivatives is given in Note [30].

28. Trade accounts payable

Trade accounts payable comprised €5,116 million (2016: €6,403 million) due within one year and €13 million (2016: €7 million) due after one year. As a result of the deconsolidation of Covestro, trade accounts payable decreased by €1,286 million.

29. Other liabilities

Other liabilities comprised:

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Other Liabilities

€ million	Dec. 31, 2016 Total	Dec. 31, 2016 Of which current	Dec. 31, 2017 Total	Dec. 31, 2017 Of which current
Other tax liabilities	544	527	420	418
Deferred income	1,463	651	1,156	195
Liabilities to employees	229	219	181	164
Liabilities for social expenses	168	157	138	130
Accrued interest on liabilities	186	181	149	139
Miscellaneous liabilities	788	686	724	606
Total	**3,378**	**2,421**	**2,768**	**1,652**

Deferred income included an upfront payment, originally amounting to US$1 billion, in connection with the strategic pharmaceutical collaboration agreed between Bayer and Merck & Co., Inc., United States, in the field of soluble guanylate cyclase (sGC) modulation. This deferred income is being amortized over a period of 13.5 years as the obligations are satisfied. At the end of 2017, the remaining amount of deferred income was €601 million (2016: €660 million). In addition, a milestone achieved in 2017 in the course of the collaboration led to the recognition of €291 million in deferred income at year end.

Deferred income also included the proceeds from the sale of the Diabetes Care business at the beginning of 2016. As at December 31, 2016, the amount deferred was €469 million. The original proceeds of around €1 billion were accrued over a period of 24 months in line with the rendering of the services and were fully realized by the end of 2017.

The deferred income included €48 million (2016: €62 million) in grants and subsidies received from governments, of which €17 million (2016: €15 million) was reversed through profit or loss.

The miscellaneous liabilities included financing commitments of US$195 million (2016: US$255 million) for the joint venture Casebia Therapeutics LLP, United Kingdom, established in December 2015 with CRISPR Therapeutics AG, Switzerland, and a further financing commitment of US$70 million for the joint venture Cooksonia Opco LLC, United States, established in September 2017 with Ginkgo Bioworks, Inc., United States, which will operate in the area of the plant microbiome.

The miscellaneous liabilities included €321 million (2016: €271 million) from derivatives.

30. Financial instruments

The system used by the Bayer Group to manage credit risks, liquidity risks and the different types of market price risk (interest-rate and currency risks), together with its objectives, methods and procedures, is outlined in the Opportunity and Risk Report, which forms part of the Combined Management Report.

30.1 Financial instruments by category

The following table shows the carrying amounts and fair values of financial assets and liabilities for each financial instrument category and a reconciliation to the corresponding line item in the statements of financial position. Since the line items “Other receivables,” “Trade accounts payable” and “Other liabilities” contain both financial instruments and nonfinancial assets or liabilities (such as other tax receivables or advance payments for services to be received in the future), the reconciliation is shown in the column headed “Nonfinancial assets / liabilities.”

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Carrying Amounts and Fair Values of Financial Instruments

€ million	Carried at amortized cost – Carrying amount	Carried at fair value [fair value for information[1]] – Based on quoted prices in active markets (Level 1) – Carrying amount	Based on observable market data (Level 2) – Carrying amount	Based on unobservable inputs (Level 3) – Carrying amount	Nonfinancial assets/liabilities – Carrying amount	Carrying amount in the statement of financial position (Dec. 31, 2017)
Trade accounts receivable	8,582					8,582
Loans and receivables	8,582					8,582
Other financial assets	1,823	452	2,085	803		5,163
Loans and receivables	1,731		[1,731]			1,731
Available-for-sale financial assets	35	448	1,452	793		2,728
Held-to-maturity financial assets	57		[58]			57
Derivatives that qualify for hedge accounting			296			296
Derivatives that do not qualify for hedge accounting		4	337	10		351
Other receivables	380			46	1,250	1,676
Loans and receivables	380		[380]			380
Available-for-sale financial assets				46		46
Nonfinancial assets					1,250	1,250
Cash and cash equivalents	7,581					7,581
Loans and receivables	7,581		[7,581]			7,581
Total financial assets	**18,366**	**452**	**2,085**	**849**		**21,752**
of which loans and receivables	18,274					18,274
of which available-for-sale financial assets	35	448	1,452	839		2,774
Financial liabilities	12,958	1,220	240			14,418
Carried at amortized cost	12,958	[11,327]	[2,183]			12,958
Carried at fair value (non-derivative)		1,220				1,220
Derivatives that qualify for hedge accounting			187			187
Derivatives that do not qualify for hedge accounting			53			53
Trade accounts payable	4,568				561	5,129
Carried at amortized cost	4,568					4,568
Nonfinancial liabilities					561	561
Other liabilities	681	2	319	7	1,759	2,768
Carried at amortized cost	681		[681]			681
Carried at fair value (non-derivative)				7		7
Derivatives that qualify for hedge accounting			288			288
Derivatives that do not qualify for hedge accounting		2	31			33
Nonfinancial liabilities					1,759	1,759
Total financial liabilities	**18,207**	**1,222**	**559**	**7**		**19,995**
of which carried at amortized cost	18,207					18,207
of which derivatives that qualify for hedge accounting			475			475
of which derivatives that do not qualify for hedge accounting		2	84			86

[1] Fair value of the financial instruments carried at amortized cost; the exemption provisions under IFRS 7.29(a) were applied for information on specific fair values.

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Carrying Amounts and Fair Values of Financial Instruments

						Dec. 31, 2016
	Carried at amortized cost	Carried at fair value [fair value for information[1]]			Nonfinancial assets / liabilities	
		Based on quoted prices in active markets (Level 1)	**Based on observable market data (Level 2)**	**Based on unobservable inputs (Level 3)**		
€ million	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Carrying amount**	**Carrying amount in the statement of financial position**
Trade accounts receivable	10,969					10,969
Loans and receivables	10,969					10,969
Other financial assets	2,245	523	3,985	803		7,556
Loans and receivables	2,148		[2,145]	[16]		2,148
Available-for-sale financial assets	32	520	3,283	794		4,629
Held-to-maturity financial assets	65		[68]			65
Derivatives that qualify for hedge accounting			269			269
Derivatives that do not qualify for hedge accounting		3	433	9		445
Other receivables	633			57	2,103	2,793
Loans and receivables	633		[633]			633
Available-for-sale financial assets				57		57
Nonfinancial assets					2,103	2,103
Cash and cash equivalents	1,899					1,899
Loans and receivables	1,899		[1,899]			1,899
Total financial assets	**15,746**	**523**	**3,985**	**860**		**21,114**
of which loans and receivables	15,649					15,649
of which available-for-sale financial assets	32	520	3,283	851		4,686
Financial liabilities	18,994		587			19,581
Carried at amortized cost	18,994	[16,040]	[3,362]			18,994
Carried at fair value (non-derivative)						–
Derivatives that qualify for hedge accounting			312			312
Derivatives that do not qualify for hedge accounting			275			275
Trade accounts payable	6,035				375	6,410
Carried at amortized cost	6,035					6,035
Nonfinancial liabilities					375	375
Other liabilities	840	2	252	25	2,259	3,378
Carried at amortized cost	840		[840]			840
Carried at fair value (nonderivative)				8		8
Derivatives that qualify for hedge accounting			165			165
Derivatives that do not qualify for hedge accounting		2	87	17		106
Nonfinancial liabilities					2,259	2,259
Total financial liabilities	**25,869**	**2**	**839**	**25**		**26,735**
of which carried at amortized cost	25,869					25,869
of which derivatives that qualify for hedge accounting			477			477
of which derivatives that do not qualify for hedge accounting		2	362	17		381

[1] Fair value of the financial instruments carried at amortized cost; the exemption provisions under IFRS 7.29(a) were applied for information on specific fair values.

The loans and receivables reflected in other financial assets and the liabilities measured at amortized cost also include receivables and liabilities under finance leases in which Bayer is the lessor or lessee and which are therefore measured in accordance with IAS 17.

Due to the short maturities of most trade accounts receivable and payable, other receivables and liabilities, and cash and cash equivalents, their carrying amounts at the closing date do not significantly differ from the fair values.

The fair values of loans and receivables, held-to-maturity financial investments and of financial liabilities carried at amortized cost that are given for information are the present values of the respective future cash flows. The present values are determined by discounting the cash flows at a closing-date interest rate, taking into account the term of the assets or liabilities and the creditworthiness of the counterparty. Where a market price is available, however, this is deemed to be the fair value.

The fair values of available-for-sale financial assets correspond to quoted prices in active markets (Level 1), are determined using valuation techniques based on observable market data as of the end of the reporting period (Level 2) or are the present values of the respective future cash flows, determined on the basis of unobservable inputs (Level 3).

The fair values of derivatives for which no publicly quoted prices exist in active markets (Level 1) are determined using valuation techniques based on observable market data as of the end of the reporting period (Level 2). In applying valuation techniques, credit value adjustments are determined to allow for the contracting party's credit risk.

Currency and commodity forward contracts are measured individually at their forward rates or forward prices on the closing date. These depend on spot rates or prices, including time spreads. The fair values of interest-rate hedging instruments and cross-currency interest-rate swaps were determined by discounting future cash flows over the remaining terms of the instruments at market rates of interest, taking into account any foreign currency translation as of the closing date.

Fair values measured using unobservable inputs are categorized within Level 3 of the fair value hierarchy. This applies to certain available-for-sale debt or equity instruments, in some cases to the fair values of embedded derivatives, and to obligations for contingent consideration in business combinations. Credit risk is frequently the principal unobservable input used to determine the fair values of debt instruments classified as available-for-sale financial assets by the discounted cash flow method. Here the credit spreads of comparable issuers are applied. A significant increase in credit risk could result in a lower fair value, whereas a significant decrease could result in a higher fair value. However, a relative change of 10% in the credit spread does not materially affect the fair value.

Embedded derivatives are separated from their respective host contracts. Such host contracts are generally sale or purchase agreements relating to the operational business. The embedded derivatives cause the cash flows from the contracts to vary with exchange-rate or price fluctuations. The internal measurement of embedded derivatives is mainly performed using the discounted cash flow method, which is based on unobservable inputs. These include planned sales and purchase volumes, and prices derived from market data. Regular monitoring is carried out based on these fair values as part of quarterly reporting.

Within financial liabilities, the fair value option permitted by IAS 39.11A was used for the first time for the debt instruments issued in June 2017 (exchangeable bond 2017/2020). On first-time recognition, the bond was designated as a financial liability at fair value through profit or loss.

The changes in the amount of financial assets and liabilities recognized at fair value based on unobservable inputs (Level 3) for each financial instrument category were as follows:

B 30.1/3

Development of Financial Assets and Liabilities (Level 3)

	2016				2017			
€ million	**Available-for-sale financial assets**	**Derivatives (net)**	**Liabilities measured at fair value (non-derivative)**	**Total**	**Available-for-sale financial assets**	**Derivatives (net)**	**Liabilities carried at fair value (non-derivative)**	**Total**
Carrying amounts of net assets/ (net liabilities), Jan. 1	**833**	**9**	**(37)**	**805**	**851**	**(8)**	**(8)**	**835**
Gains (losses) recognized in profit or loss	18	(17)	23	24	15	21	–	36
of which related to assets/liabilities recognized in the statements of financial position	18	(17)	–	1	15	21	–	36
Gains (losses) recognized outside profit or loss	9	–	–	9	(16)	–	–	(16)
Additions of assets/(liabilities)	46	–	–	46	6	–	–	6
Settlements of (assets)/liabilities	(23)	–	6	(17)	(17)	–	1	(16)
Disposals from divestments / changes in scope of consolidation	–	–	–	–	–	(3)	–	(3)
Transfers to a different fair-value hierarchy	(32)	–	–	(32)	–	–	–	–
Carrying amounts of net assets/ (net liabilities), Dec. 31	**851**	**(8)**	**(8)**	**835**	**839**	**10**	**(7)**	**842**

The changes recognized in profit or loss were included in other operating income/expenses, in interest income in the financial result, and in exchange gains/losses.

Income, expense, gains and losses on financial instruments can be assigned to the following categories:

B 30.1/4

Income, Expense, Gains and Losses on Financial Instruments

€ million	Loans and receivables	Held-to-maturity financial investments	Available for-sale financial assets	Held for trading	Liabilities carried at amortized cost	Liabilities carried at fair value (non-derivative)	Total
							2017
Interest income	61	–	37	–	78	–	176
Interest expense	–	–	–	(3)	(628)	–	(631)
Income/expenses from affiliated companies	–	–	2	–	–	–	2
Changes in fair value	–	–	–	17	–	(172)	(155)
Impairment losses	(139)	–	(1)	–	–	–	(140)
Impairment loss reversals	23	–	5	–	–	–	28
Exchange gains/losses	(733)	–	–	(232)	620	–	(345)
Gains/losses from retirements	–	–	5	–	–	–	5
Other financial income/expenses	(14)	–	(7)	–	–	–	(21)
Net result	**(802)**	**–**	**41**	**(218)**	**70**	**(172)**	**(1,081)**

B 30.1/5

Income, Expense, Gains and Losses on Financial Instruments (Previous Year)

€ million	Loans and receivables	Held-to-maturity financial investments	Available-for-sale financial assets	Held for trading	Liabilities carried at amortized cost	Liabilities carried at fair value (non-derivative)	Total
							2016
Interest income	42	–	21	2	62	–	127
Interest expense	–	–	–	(3)	(597)	–	(600)
Income/expenses from affiliated companies	–	–	–	–	–	–	–
Changes in fair value	–	–	–	(71)	–	–	(71)
Impairment losses	(163)	–	(2)	–	–	–	(165)
Impairment loss reversals	23	–	–	–	–	–	23
Exchange gains/losses	348	–	–	(55)	(329)	–	(36)
Gains/losses from retirements	–	–	6	–	–	–	6
Other financial income/expenses	–	–	–	–	(34)	–	(34)
Net result	**250**	**–**	**25**	**(127)**	**(898)**	**–**	**(750)**

2016 figures restated

The interest expense of €628 million (2016: €597 million) from non-derivative financial liabilities also included the income and expense from interest-rate swaps that qualified for hedge accounting. Interest income from financial assets not measured at fair value through profit or loss amounted to €98 million (2016: €63 million). Interest income from interest-rate derivatives that qualified for hedge accounting was €78 million (2016: €62 million). The changes in fair values of financial assets held for trading related mainly to forward commodity contracts and embedded derivatives.

The changes of minus €172 million in the fair value of (nonderivative) liabilities measured at fair value contain fair value adjustments pertaining to debt instruments (exchangeable bond 2017/2020) issued in June 2017. The changes in fair value relating to credit risks were not material.

Derivatives that form part of a master netting arrangement, constitute a financial asset or liability and can only be netted in the event of breach of contract by, or insolvency of, one of the contracting parties do not satisfy, or only partially satisfy, the criteria for offsetting in the statement of financial position according to IAS 32. The volume of such derivatives with positive fair values was €654 million (2016: €630 million), and the volume with negative fair values was €520 million (2016: €762 million). Included here is an amount of €312 million (2016: €362 million) in positive and negative fair values of derivatives concluded with the same contracting party.

30.2 Maturity analysis

The liquidity risks to which the Bayer Group was exposed from its financial instruments at the end of the reporting period comprised obligations for future interest and repayment installments on financial liabilities and the liquidity risk arising from derivatives.

There were also loan commitments under an as yet unpaid €1,005 million (2016: €1,005 million) portion of the effective initial fund of Bayer-Pensionskasse VVaG, which may result in further payments by Bayer AG in subsequent years.

B 30.2/1

Maturity Analysis of Financial Instruments

€ million	Dec. 31, 2017 Carrying amount	2018	2019	2020	2021	2022	after 2022
							Interest and repayment
Financial liabilities							
Bonds and notes / promissory notes	12,436	719	2,096	1,487	2,288	236	7,125
Liabilities to banks	534	527	20	–	–	–	–
Remaining liabilities	1,208	716	359	40	32	26	177
Trade accounts payable	4,568	4,555	11	2	–	–	–
Other liabilities							
Accrued interest on liabilities	149	140	1	1	1	1	5
Remaining liabilities	539	455	66	3	2	2	11
Liabilities from derivatives							
Derivatives that qualify for hedge accounting	475	443	34	–	6	–	–
Derivatives that do not qualify for hedge accounting	86	88	1	2	–	–	–
Receivables from derivatives							
Derivatives that qualify for hedge accounting	296	144	62	17	2	–	–
Derivatives that do not qualify for hedge accounting	351	331	4	1	1	–	–
Loan commitments	–	1,005	–	–	–	–	–
Financial guarantees	–	12	–	–	–	–	–

B 30.2/2

Maturity Analysis of Financial Instruments

€ million	Dec. 31, 2016 Carrying amount	2017	2018	2019	2020	2021	after 2021
							Interest and repayment
Financial liabilities							
Bonds and notes / promissory notes	15,991	2,261	2,160	2,367	295	2,916	8,093
Liabilities to banks	1,837	884	998	39	–	–	9
Remaining liabilities	1,166	293	303	382	61	58	268
Trade accounts payable	6,035	6,028	4	2	1	–	–
Other liabilities							
Accrued interest on liabilities	186	181	1	1	1	–	2
Remaining liabilities	662	626	3	5	2	1	25
Liabilities from derivatives							
Derivatives that qualify for hedge accounting	477	178	231	157	2	–	–
Derivatives that do not qualify for hedge accounting	381	374	3	4	2	1	1
Receivables from derivatives							
Derivatives that qualify for hedge accounting	269	210	23	4	3	2	–
Derivatives that do not qualify for hedge accounting	445	467	2	2	1	1	1
Loan commitments	–	1,213	–	–	–	–	–
Financial guarantees	–	14	–	–	–	–	3

30.3 Information on derivatives

Asset and liability fair values and future cash flows are exposed to currency, interest-rate and commodity price risks. Derivatives are used to reduce this risk. In some cases they are designated as hedging instruments in a hedge accounting relationship.

Currency risks

Foreign currency receivables and liabilities are hedged using foreign exchange derivatives without the existence of a hedge accounting relationship. A bond of Bayer AG denominated in British pounds was swapped on the issuance date into a fixed-rate euro bond by means of a cross-currency interest-rate swap, which was designated as a cash flow hedge. Cross-currency interest-rate swaps used to hedge intra-Group loans were also designated as cash flow hedges.

Fluctuations in future cash flows resulting from forecasted foreign currency transactions and procurement activities are avoided partly through derivatives contracts, most of which are designated as cash flow hedges.

Foreign currency risks related to the planned acquisition of Monsanto Company were partially hedged with currency derivatives, which were designated as cash flow hedges.

Interest-rate risk

The interest-rate risks from fixed-interest borrowings are managed in part using interest-rate swaps. Two interest-rate swaps in the total amount of €200 million were designated as fair value hedges for the €750 million DIP bond issued in 2014 and maturing in 2021.

Losses of €3 million were recorded on fair-value hedging instruments in 2017 (2016: €1 million). Gains of €4 million were recorded on the underlying hedged items (2016: €1 million).

Interest-rate risks relating to the planned acquisition of Monsanto were partly hedged using interest-rate derivatives. These were designated as cash flow hedges.

Commodity price risks

Hedging contracts are also used to partly reduce exposure to fluctuations in future cash outflows and inflows resulting from price changes on procurement and selling markets.

Hedging of obligations under stock-based employee compensation programs

A portion of the obligations to make variable payments to employees under stock-based compensation programs (Aspire) is hedged against share price fluctuations using derivatives contracts that are settled in cash at maturity. These derivatives are designated as cash flow hedges.

Further information on cash flow hedges

Other comprehensive income from cash flow hedges declined in 2017 by €89 million (2016: increased by €44 million) due to changes in the fair values of derivatives net of tax. Total changes of €3 million in the fair values of derivatives were expensed in 2017 (2016: €3 million). The respective pro-rated deferred tax income of €2 million (2016: €2 million) was likewise recognized through profit or loss.

No material ineffective portions of hedges required recognition through profit or loss in 2017 or 2016.

The income and expense from cash flow hedges recognized in other comprehensive income as at December 31, 2017, mainly comprised gains of €177 million (2016: €204 million) and losses of €289 million (2016: €143 million) from the hedging of forecasted transactions in foreign currencies and the planned acquisition of Monsanto Company. Of these gains and losses, a net amount of €102 million (2016: minus €91 million) will be re-classifiable to profit or loss within one year, and a net amount of minus €17 million (2016: €2 million) in subsequent years.

The fair values of existing contracts in the major categories at the end of the reporting period are indicated in the following table together with the included volumes of hedges.

B 30.3/1

Fair Values of Derivatives

€ million	Dec. 31, 2016 Notional amount[1]	Dec. 31, 2016 Positive fair value	Dec. 31, 2016 Negative fair value	Dec. 31, 2017 Notional amount[1]	Dec. 31, 2017 Positive fair value	Dec. 31, 2017 Negative fair value
Currency hedging of recorded transactions	**22,645**	**299**	**(587)**	**12,321**	**233**	**(240)**
Forward exchange contracts	20,454	296	(273)	10,399	144	(53)
Cross-currency interest-rate swaps	2,191	3	(314)	1,922	89	(187)
of which cash flow hedges	2,146	3	(312)	1,880	87	(187)
Currency hedging of forecasted transactions	**17,799**	**317**	**(206)**	**9,475**	**116**	**(194)**
Forward exchange contracts	3,805	48	(145)	9,292	105	(194)
of which cash flow hedges	3,672	43	(138)	9,205	103	(192)
Currency options	13,994	269	(61)	183	11	–
of which cash flow hedges	13,698	161	(5)	183	11	–
Interest-rate hedging of recorded transactions	**200**	**14**	**–**	**200**	**11**	**–**
Interest-rate swaps	200	14	–	200	11	–
of which fair value hedges	200	14	–	200	11	–
Interest-rate hedging of forecasted transactions	**–**	**–**	**–**	**9,086**	**64**	**(81)**
Interest-rate swaps	–	–	–	9,086	64	(81)
of which cash flow hedges	–	–	–	9,086	64	(81)
	–	–	–	–	–	–
Commodity price hedging	**168**	**5**	**(4)**	**420**	**6**	**(3)**
Forward commodity contracts	167	4	(4)	414	6	(3)
Commodity option contracts	1	1	–	6	–	–
Hedging of stock-based employee compensation programs	**532**	**48**	**(22)**	**544**	**20**	**(15)**
Share price options	152	48	–	75	5	–
of which cash flow hedges	152	48	–	75	5	–
Forward share transactions	380	–	(22)	469	15	(15)
of which cash flow hedges	380	–	(22)	469	15	(15)
Total	**41,344**	**683**	**(819)**	**32,046**	**450**	**(533)**
of which current derivatives	38,349	635	(514)	30,259	317	(499)
for currency hedging	38,111	597	(510)	20,678	242	(415)
for interest-rate hedging[2]	–	3	–	9,086	64	(81)
for raw material price hedging	168	5	(4)	420	6	(3)
for hedging of stock-based employee compensation programs	70	30	–	75	5	–

[1] The notional amount is reported as gross volume, which also contains economically closed hedges.
[2] The portion of the fair value of long-term interest-rate swaps that relates to current interest payments was classified as current.

Other information

In connection with the sale of Covestro AG shares in 2017, Bayer AG entered into derivative contracts. These resulted in Bayer AG retaining economic exposure to the price of Covestro AG shares. As at the end of the year, Bayer AG continued to hold derivatives on the Covestro AG shares with a notional amount of €752 million, and had generated a gain of €50 million from these derivatives. The derivatives had a fair value of €150 million as of December 31, 2017, that was also recognized in profit and loss.

31. Contingent liabilities and other financial commitments

Contingent liabilities

The following warranty contracts, guarantees and other contingent liabilities existed at the end of the reporting period:

B 31/1

Contingent Liabilities

€ million	Dec. 31, 2016	Dec. 31, 2017
Warranties	100	88
Guarantees	264	148
Other contingent liabilities	444	614
Total	**808**	**850**

The guarantees mainly comprise a declaration issued by Bayer AG to the trustees of the U.K. pension plans guaranteeing the pension obligations of Bayer Public Limited Company and Bayer CropScience Limited. Under the declaration, Bayer AG – in addition to the two companies – undertakes to make further payments into the plans upon receipt of a payment request from the trustees. The net liability with respect to these defined benefit plans as of December 31, 2017, declined to €148 million (2016: €264 million).

Other financial commitments

The other financial commitments were as follows:

B 31/2

Other Financial Commitments

€ million	Dec. 31, 2016	Dec. 31, 2017
Operating leases	1,101	801
Commitments under purchase agreements for property, plant and equipment	479	493
Contractual obligation to acquire intangible assets	243	83
Capital contribution commitments	182	149
Binding acquisition agreement with Monsanto Company, St. Louis, Missouri, U.S.A. [1]	53,000	47,000
Unpaid portion of the effective initial fund	1,213	1,005
Potential payment obligations under R&D collaboration agreements	2,444	2,349
Revenue-based milestone payment commitments	1,839	1,923
Total	**60,501**	**53,803**

[1] The contingent financial commitment of approximately US$56 billion was translated at the closing rate and rounded.

On September 14, 2016, Bayer signed a definitive merger agreement with Monsanto Company, St. Louis, Missouri, United States, which provides for Bayer's acquisition of all outstanding shares in Monsanto Company against a cash payment of US$128 per share. Bayer thus has a contingent financial commitment in the amount of approximately US$56 billion to acquire Monsanto's entire outstanding capital stock. Further details of this planned acquisition are given in Note [6.2].

Financial commitments resulting from orders already placed under purchase agreements related to planned or ongoing capital expenditure projects totaled €493 million (2016: €479 million), while contractual obligations to acquire intangible assets totaled €83 million (2016: €243 million).

The nondiscounted future minimum lease payments relating to operating leases totaled €801 million (2016: €1,101 million). The decline is largely due to the deconsolidation of Covestro. The maturities of the respective payment obligations were as follows:

B 31/3

Operating Leases

Maturing in	Dec. 31, 2016	Maturing in	Dec. 31, 2017
	€ million		€ million
2017	237	2018	166
2018	192	2019	143
2019	161	2020	124
2020	138	2021	93
2021	102	2022	73
2022 or later	271	2023 or later	202
Total	**1,101**	**Total**	**801**

The Bayer Group has entered into cooperation agreements with third parties under which it has agreed to fund various research and development projects or has assumed other payment obligations based on the achievement of certain milestones or other specific conditions. If all of these payments have to be made, their maturity distribution as of December 31, 2017, was expected to be as set forth in the following table. The amounts shown represent the maximum payments to be made, and it is unlikely that they will all fall due. Since the achievement of the conditions for payment is highly uncertain, both the amounts and the dates of the actual payments may vary considerably from those stated in the table.

B 31/4

Potential Payment Obligations Under R&D Collaboration Agreements

Maturing in	Dec. 31, 2016	Maturing in	Dec. 31, 2017
	€ million		€ million
2017	233	2018	157
2018	151	2019	510
2019	333	2020	143
2020	66	2021	143
2021	28	2022	54
2022 or later	1,633	2023 or later	1,342
Total	**2,444**	**Total**	**2,349**

In addition to the above commitments, there were also revenue-based milestone payment commitments totaling €1,923 million (2016: €1,839 million), of which €1,764 million (2016: €1,834 million) was not expected to fall due until 2023 (2016: 2022) or later. These commitments are also highly uncertain.

32. Legal risks

As a global company with a diverse business portfolio, the Bayer Group is exposed to numerous legal risks, particularly in the areas of product liability, competition and antitrust law, anticorruption, patent disputes, tax assessments and environmental matters. The outcome of any current or future proceedings cannot normally be predicted. It is therefore possible that legal or regulatory judgments or future settlements could give rise to expenses that are not covered, or not fully covered, by insurers' compensation payments and could significantly affect our revenues and earnings.

Legal proceedings currently considered to involve material risks are outlined below. The legal proceedings referred to do not represent an exhaustive list.

Product-related litigation

Mirena™: As of January 30, 2018, lawsuits from approximately 2,900 users of Mirena™, a levonorgestrel-releasing intrauterine system providing long-term contraception, had been served upon Bayer in the United States (excluding lawsuits no longer pending). Plaintiffs allege personal injuries resulting from the use of Mirena™, including perforation of the uterus, ectopic pregnancy or idiopathic intracranial hypertension, and seek compensatory and punitive damages. Plaintiffs claim, inter alia, that Mirena™ is defective and that Bayer knew or should have known of the risks associated with it and failed to adequately warn its users. Additional lawsuits are anticipated. In April 2017, most of the cases pending in U.S. federal courts in which plaintiffs allege idiopathic intracranial hypertension were consolidated in a multidistrict litigation ("MDL") proceeding for common pre-trial management. As of January 30, 2018, lawsuits from approximately 400 users of Mirena™ alleging idiopathic intracranial hypertension had been served upon Bayer in the United States. Another MDL proceeding concerning perforation cases has, in the meantime, been dismissed. The Second Circuit Court of Appeals affirmed the perforation MDL district court's summary judgment order of 2016 dismissing approximately 1,230 cases pending before that court. In August 2017, Bayer reached an agreement in principle with plaintiffs' counsel leadership for global settlement of the perforation litigation, for a total amount of US$12.2 million. As of January 30, 2018, a total of approximately 4,000 cases would be included in the settlement. The idiopathic intracranial hypertension MDL proceeding is not included in the settlement.

As of January 30, 2018, five Canadian lawsuits relating to Mirena™ seeking class action certification had been served upon Bayer. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Xarelto™: As of January 30, 2018, U.S. lawsuits from approximately 22,000 recipients of Xarelto™, an oral anticoagulant for the treatment and prevention of blood clots, had been served upon Bayer. Plaintiffs allege personal injuries from the use of Xarelto™, including cerebral, gastrointestinal or other bleeding and death, and seek compensatory and punitive damages. They claim, amongst other things, that Xarelto™ is defective and that Bayer knew or should have known of these risks associated with the use of Xarelto™ and failed to adequately warn its users. Additional lawsuits are anticipated. Cases pending in U.S. federal courts have been consolidated in an MDL for common pre-trial management. In May, June and August 2017, the first three MDL trials resulted in complete defense verdicts; plaintiffs have appealed all three verdicts. In January 2018, after the first trial to proceed in Pennsylvania state court had initially resulted in a judgment in favor of the plaintiff, the trial judge vacated the jury's verdict and granted judgment in favor of Bayer. Further Pennsylvania state court trials are currently scheduled for the first and second quarters of 2018. Bayer anticipates that additional trials will be scheduled.

As of January 30, 2018, ten Canadian lawsuits relating to Xarelto™ seeking class action certification had been served upon Bayer. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Essure™: As of January 30, 2018, U.S. lawsuits from approximately 16,100 users of Essure™, a medical device offering permanent birth control with a nonsurgical procedure, had been served upon Bayer. Plaintiffs allege personal injuries from the use of Essure™, including hysterectomy, perforation, pain, bleeding, weight gain, nickel sensitivity, depression and unwanted pregnancy, and seek compensatory and punitive damages. Additional lawsuits are anticipated.

As of January 30, 2018, two Canadian lawsuits relating to Essure™ seeking class action certification had been served upon Bayer. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Class actions over neonicotinoids in Canada: Proposed class actions against Bayer were filed in Quebec and Ontario (Canada) concerning crop protection products containing the active substances imidacloprid and clothianidin (neonicotinoids). Plaintiffs are honey producers, who have filed a proposed nationwide class action in Ontario and a Quebec-only class action in Quebec. Plaintiffs claim for damages and punitive damages and allege Bayer and another crop protection company were negligent in the design, development, marketing and sale of neonicotinoid pesticides. The proposed Ontario class action is in a very early procedural phase. In Quebec, the plaintiff sought authorization (certification) of a class for which a motion was heard in November 2017. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

In connection with the above-mentioned proceedings, Bayer is insured against statutory product liability claims against Bayer to the extent customary in the respective industries and has, based on the information currently available, taken appropriate accounting measures for anticipated defense costs. However, the accounting measures relating to Essure™ claims exceed the available insurance coverage.

Patent disputes

Adempas™: In January 2018, Bayer filed patent infringement lawsuits in a U.S. federal court against Alembic Pharmaceuticals Limited, Alembic Global Holding SA, Alembic Pharmaceuticals, Inc. and INC Research, LLC (together “Alembic”), against MSN Laboratories Private Limited and MSN Pharmaceuticals Inc. (together “MSN”) and against Teva Pharmaceuticals USA, Inc. and Teva Pharmaceutical Industries Ltd. (together “Teva”). In December 2017, Bayer had received notices of an Abbreviated New Drug Application with a paragraph IV certification (“ANDA IV”) pursuant to which Alembic, MSN and Teva each seek approval of a generic version of Bayer’s pulmonary hypertension drug Adempas™ in the United States.

Betaferon™/Betaseron™: In 2010, Bayer filed a complaint against Biogen Idec MA Inc. in a U.S. federal court seeking a declaration by the court that a patent issued to Biogen in 2009 is invalid and not infringed by Bayer’s production and distribution of Betaseron™, Bayer’s drug product for the treatment of multiple sclerosis. Biogen is alleging patent infringement by Bayer through Bayer’s production and distribution of Betaseron™ and Extavia™ and has sued Bayer accordingly. Bayer manufactures Betaseron™ and distributes the product in the United States. Extavia™ is also a drug product for the treatment of multiple sclerosis; it is manufactured by Bayer, but distributed in the United States by Novartis Pharmaceuticals Corporation, another defendant in the lawsuit. In 2016, the U.S. federal court decided a disputed issue regarding the scope of the patent in Biogen’s favor. Bayer disagrees with the decision, which may be appealed at the conclusion of the proceedings in the U.S. federal court.

Damoctocog alfa pegol (BAY 94-9027, long-acting recombinant factor VIII): In August 2017, Bayer filed a lawsuit in a U.S. federal court against Nektar Therapeutics ("Nektar"), Baxalta Incorporated and Baxalta U.S., Inc. (together "Baxalta") seeking a declaration by the court that a patent by Nektar is invalid and not infringed by Bayer's drug candidate BAY 94-9027 for the treatment of hemophilia A. In September 2017, Baxalta and Nektar filed a complaint in a different U.S. federal court against Bayer alleging that BAY 94-9027 infringes seven other patents by Nektar. Regarding the complaint by Bayer, Nektar and Baxalta gave Bayer a covenant not to make any claims against Bayer for infringement of that patent. Bayer amended the complaint to now seek a declaration by the court that the seven other patents by Nektar are not infringed by BAY 94-9027. The patents are part of a patent family registered in the name of Nektar and further comprising European patent applications with the title "Polymer-factor VIII moiety conjugates" which are at issue in a lawsuit Bayer filed against Nektar in 2013 in the district court of Munich, Germany. In this proceeding, Bayer claims rights to the European patent applications based on a past collaboration between Bayer and Nektar in the field of hemophilia. However, Bayer believes that the patent family does not include any valid patent claim relevant for Bayer's drug candidate BAY 94-9027 for the treatment of hemophilia A.

Nexavar™: In 2015, Bayer filed patent infringement lawsuits in a U.S. federal court against Mylan Pharmaceuticals Inc. and Mylan Inc. (together "Mylan"). In 2014 and 2015, Bayer had received notices of an ANDA IV application pursuant to which Mylan seeks approval of a generic version of Bayer's cancer drug Nexavar™ in the United States. In October 2017, Bayer reached agreement with Mylan to settle this patent dispute. Under the settlement terms, Mylan will obtain a license to sell its generic version of Nexavar™ in the United States at a date after the expiration of the patent for the active ingredient expiring in January 2020. In 2016, Bayer had received another notice of such an ANDA IV application by Teva Pharmaceuticals USA, Inc. Bayer filed a patent infringement lawsuit against Teva in the same U.S. federal court. In January 2018, Bayer reached agreement with Teva to settle this patent dispute. Under the settlement terms, Teva will obtain a license to sell its generic version of Nexavar™ in the United States at a date after the expiration of the patent for the active ingredient expiring in January 2020.

Stivarga™: In 2016, Bayer filed patent infringement lawsuits in a U.S. federal court against Apotex, Inc. and Apotex Corp. (together "Apotex") and against Teva. Bayer had received notices of an ANDA IV application pursuant to which Apotex and Teva each seek approval of a generic version of Bayer's cancer drug Stivarga™ in the United States.

Xarelto™: In 2015, Bayer and Janssen Pharmaceuticals filed a patent infringement lawsuit in a U.S. federal court against Aurobindo Pharma Limited, Aurobindo Pharma USA, Inc. (together "Aurobindo"), Breckenridge Pharmaceutical Inc. ("Breckenridge"), Micro Labs Ltd., Micro Labs USA Inc. (together "Micro Labs"), Mylan, Prinston Pharmaceutical Inc. ("Prinston"), Sigmapharm Laboratories, LLC ("Sigmapharm"), Torrent Pharmaceuticals, Limited and Torrent Pharma Inc. (together "Torrent"). Bayer had received notices of an ANDA IV application by Aurobindo, Breckenridge, Micro Labs, Mylan, Prinston, Sigmapharm and Torrent, each seeking approval to market a generic version of Xarelto™, an oral anticoagulant for the treatment and prevention of blood clots, in the United States. In 2016, Bayer received another notice of such an ANDA IV application by InvaGen Pharmaceuticals, Inc. ("InvaGen"). Bayer and Janssen Pharmaceuticals filed a patent infringement lawsuit against InvaGen in the same U.S. federal court.

Bayer believes it has meritorious defenses in the above ongoing patent disputes and intends to defend itself vigorously.

Further Legal Proceedings

Trasylol™/Avelox™: A qui tam complaint relating to marketing practices for Trasylol™ (aprotinin) and Avelox™ (moxifloxacin) filed by a former Bayer employee is pending in the United States District Court in New Jersey. The U.S. government has declined to intervene at the present time.

Newark Bay Environmental Matters: In the United States, Bayer is one of numerous parties involved in a series of claims brought by federal and state environmental protection agencies. The claims arise from operations by entities which historically were conducted near Newark Bay or surrounding bodies of water, or which allegedly discharged hazardous waste into these waterways or onto nearby land. Bayer and the other potentially responsible parties are being asked to remediate and contribute to the payment of past and future remediation or restoration costs and damages. In 2016, Bayer learned that two major potentially responsible parties had filed for protection under Chapter 11 of the U.S. Bankruptcy Code. While Bayer remains unable to determine the extent of its liability for these matters, this development is likely to adversely affect the share of costs potentially allocated to Bayer.

In the Lower Passaic River matter, a group of more than sixty companies including Bayer is investigating contaminated sediments in the riverbed under the supervision of the United States Environmental Protection Agency (EPA) and other governmental authorities. Future remediation will involve some form of dredging, the nature and scope of which are not yet defined, and potentially other tasks. The cost of the investigation and the remediation work may be substantial if the final remedy involves extensive dredging and disposal of impacted sediments. In the Newark Bay matter, an unaffiliated party is currently conducting an investigation of sediments in Newark Bay under EPA supervision. The investigation is in a preliminary stage. Bayer has contributed to certain investigation costs in the past and may incur costs for future investigation and remediation activities in Newark Bay.

Bayer has also been notified by governmental authorities acting as natural resource trustees that it may have liability for natural resource damages arising from the contamination of the Lower Passaic River, Newark Bay and surrounding water bodies. Bayer is currently unable to determine the extent of its liability.

Asbestos: A further risk may arise from asbestos litigation in the United States. In many cases, the plaintiffs allege that Bayer and co-defendants employed third parties on their sites in past decades without providing them with sufficient warnings or protection against the known dangers of asbestos. Additionally, a Bayer affiliate in the United States is the legal successor to companies that sold asbestos products until 1976. Union Carbide has agreed to indemnify Bayer for this liability. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Tax Proceedings

Stamp taxes in Greece: In 2014, 2016 and 2017, a Greek administrative court of first instance dismissed Bayer's lawsuits against the assessment of stamp taxes and contingent penalties in a total amount of approximately €130 million on certain intra-Group loans to a Greek subsidiary. Bayer is convinced that the decisions are wrong and either has appealed the relevant decisions or plans to do so in due course. Bayer believes it has meritorious arguments to support its legal position and intends to defend itself vigorously.

Notes to the Statements of Cash Flows

The statement of cash flows shows how cash inflows and outflows during the fiscal year affected the cash and cash equivalents of the Bayer Group. Cash flows are classified by operating, investing and financing activities in accordance with IAS 7 (Statement of Cash Flows). Effects of changes in the scope of consolidation are stated separately.

Of the cash and cash equivalents, an amount of €14 million (2016: €17 million) had limited availability due to foreign exchange restrictions. Past experience has shown such restrictions to be of short duration. The above amount included €0 million (2016: €3 million) of exchange-restricted cash in Venezuela. The conversion of cash from Venezuelan bolivars (VEF) into U.S. dollars is subject to a government approval process.

The cash flows reported by consolidated companies outside the eurozone are translated at average monthly exchange rates, with the exception of cash and cash equivalents, which are translated at closing rates. The “Change in cash and cash equivalents due to exchange rate movements” is reported in a separate line item.

33. Net cash provided by (used in) operating activities

The operating cash flow (total) declined by 10.5% in 2017, to €8,134 million. The prior-year figure included inflows from the divestment of Diabetes Care. The operating cash flow from continuing operations was €6,611 million, up 2.7% from the previous year. It included the operating portion of the payments received from DOW Chemical in connection with a patents dispute.

The transfer of Covestro shares with a value of €504 million (2016: €337 million) to Bayer Pension Trust e. V. was a noncash transaction and therefore did not result in an operating cash outflow.

34. Net cash provided by (used in) investing activities

The net cash outflow for investing activities in 2017 amounted to €432 million (2016: €8,729 million).

Additions to property, plant and equipment and intangible assets in 2017 resulted in a cash outflow of €2,366 million (2016: €2,578 million). Cash inflows from sales of property, plant and equipment and intangible assets amounted to €241 million (2016: €111 million).

The proceeds of €999 million from the sale of Covestro shares as of September 29, 2017, which, together with the control termination agreement concluded, led to the de facto loss of control, less the cash of €637 million derecognized with Covestro, resulted in a cash inflow of €362 million from divestments. The sale of some of these shares by the banks in December 2017 resulted in a further cash inflow of €37 million.

The net cash inflow from noncurrent and current financial assets amounted to €1,230 million (2016: net cash outflow of €6,335 million).

35. Net cash provided by (used in) financing activities

In 2017 there was a net cash outflow of €1,881 million (2016: €350 million) for financing activities. Net loan repayments amounted to €2,479 million (2016: €730 million).

Cash outflows for dividend payments amounted to €2,364 million (2016: €2,126 million). Net interest payments – including payments for and receipts from interest-rate swaps – declined to €732 million (2016: €794 million). The sale of Covestro shares prior to the de facto loss of control resulted in a total net inflow of €3,717 million. In 2016, the net inflow of €3,952 million from the mandatory convertible notes was reflected as a capital contribution of €3,300 million and a borrowing of €652 million.

The transfer of Covestro shares with a value of €504 million (2016: €337 million) to Bayer Pension Trust e. V. was a noncash transaction and therefore did not result in a financing cash inflow.

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Financial Liabilities

		Cash flows			Non-cash changes		
€ million	**Dec. 31, 2016**		**Acquisition Divestment**	**Currency effects**	**New contracts**	**Fair value changes[1]**	**Dec. 31, 2017**
Bonds and notes/promissory notes	15,991	(1,121)	(1,492)	(788)	–	(154)	12,436
Liabilities to banks	1,837	(1,006)	(92)	(203)	–	(2)	534
Liabilities under finance leases	436	(153)	(229)	(28)	212	–	238
Liabilities from derivatives	587	(434)	(6)	–	–	93	240
Other financial liabilities	730	235	–	(4)	–	9	970
Total	**19,581**	**(2,479)**	**(1,819)**	**(1,023)**	**212**	**(54)**	**14,418**

[1] Including discount effects

Other Information

36. Audit fees

The following fees for the services of the worldwide network of Deloitte or Deloitte GmbH Wirtschaftsprüfungsgesellschaft (Deloitte GmbH WPG) were recognized as expenses:

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Audit Fees

	PwC	Deloitte	Of which PwC GmbH WPG	Of which Deloitte GmbH WPG
€ million	**2016**	**2017**	**2016**	**2017**
Financial statements auditing	16	9	7	3
Audit-related services and other audit work	2	2	1	2
Tax consultancy	3	1	–	–
Other services	7	5	5	4
Total	**28**	**17**	**13**	**9**

The fees for the auditing of financial statements mainly comprised those for the audits of the consolidated financial statements of the Bayer Group and the financial statements of Bayer AG and its subsidiaries. In 2016, €2 million in fees related to the auditing of the Covestro Group's financial statements.

The non-audit-related services primarily related to the analysis of financial information concerning business entities considered for divestment (Other services), the assessment of financial and nonfinancial information outside of financial statement auditing (Audit-related services and other audit work), and compliance-related tax consultancy services that had neither a material or direct impact on the annual financial statements or consolidated financial statements.

Deloitte has been Bayer's auditor since 2017 and is thus the successor to PricewaterhouseCoopers (PwC). The Independent Auditor's Report on the consolidated financial statements for fiscal 2017 was signed by Mr. Heiner Kompenhans and Prof. Frank Beine. Both signed the Independent Auditor's Report for the first time for the year ended December 31, 2017, and are the responsible audit partners.

37. Related parties

Related parties as defined in IAS 24 (Related Party Disclosures) are those legal entities and natural persons that are able to exert influence on Bayer AG and its subsidiaries or over which Bayer AG or its subsidiaries exercise control or joint control or have a significant influence. They include, in particular, nonconsolidated subsidiaries, joint ventures and associates included in the consolidated financial statements at cost of acquisition or using the equity method, and post-employment benefit plans, as well as the corporate officers of Bayer AG whose compensation is reported in Note [38] and in the Compensation Report, which forms part of the Combined Management Report.

Transactions with nonconsolidated subsidiaries, joint ventures and associates included in the consolidated financial statements at cost of acquisition or using the equity method, and post-employment benefit plans are carried out on an arm's-length basis.

The following table shows the volume of transactions with related parties included in the consolidated financial statements of the Bayer Group at amortized cost or using the equity method, and with post-employment benefit plans:

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Related Parties

	2016				2017			
€ million	**Sales of goods and services**	**Purchases of goods and services**	**Receiv-ables**	**Liabilities**	**Sales of goods and services**	**Purchases of goods and services**	**Receiv-ables**	**Liabilities**
Nonconsolidated subsidiaries	4	5	9	19	5	6	6	16
Joint ventures	24	–	4	243	25	–	3	164
Associates	34	557	3	6	84	84	119	87
Post-employment benefit plans	–	–	907	63	–	–	974	70

Intercompany profits and losses for companies accounted for in the consolidated financial statements using the equity method were immaterial in 2017 and 2016.

In the second quarter of 2017, Bayer AG increased the coverage of Bayer Pension Trust e. V. through a deposit of 8 million of the shares it held in Covestro AG. The shares deposited amounted to 4.0% of the outstanding shares of Covestro AG and had a value of €504 million.

Due to the loss of control at the end of the third quarter of 2017, Covestro is now an associate. Consequently, receivables from and payables to associates both increased from €0.0 billion as of December 31, 2016, to €0.1 billion as of December 31, 2017. In this connection, goods and services received from associates declined from €0.6 billion to €0.1 billion. From the end of the third quarter of 2017, transactions in goods and services between Covestro and its associates are no longer reflected in the consolidated financial statements of the Bayer Group.

Bayer AG has undertaken to provide jouissance right capital (Genussrechtskapital) in the form of an interest-bearing loan with a nominal volume of €150 million (2016: €150 million) for Bayer-Pensionskasse VVaG. The entire amount remained undrawn as of December 31, 2017. The carrying amount as of December 31, 2017, was €152 million (2016: €154 million). Loan capital was first provided to Bayer-Pensionskasse VVaG in 2008 for its effective initial fund. This capital had a nominal volume of €595 million as of December 31, 2017 (2016: €595 million). The carrying amount as of December 31, 2017, was €605 million (2016: €612 million). The outstanding receivables, comprised of different tranches, are each subject to a five-year interest-rate adjustment mechanism. Interest income of €15 million was recognized for 2017 (2016: €18 million).

Impairment losses of €2 million were recognized on receivables from associates in 2017 (2016: €0 million).

38. Total compensation of the Board of Management and the Supervisory Board, advances and loans

The compensation of the Board of Management comprises short-term payments, stock-based payments and post-employment benefits.

The following table shows the individual components of the Board of Management's compensation according to IFRS. Further details are provided in the Compensation Report, which forms part of the Combined Management Report:

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Board of Management Compensation according to IFRS

€ thousand	2016	2017
Fixed annual compensation	6,385	6,148
Fringe benefits	664	266
Total short-term non-performance-related compensation	**7,049**	**6,414**
Short-term performance-related cash compensation	9,063	4,890
Total short-term compensation	**16,112**	**11,304**
Change in value of existing entitlements to stock-based compensation (virtual Bayer shares)	(1,275)	538
Stock-based compensation (Aspire) earned in the respective year	5,217	9,082
Change in value of existing entitlements to stock-based compensation (Aspire)	(923)	(641)
Total stock-based compensation (long-term incentive)	**3,019**	**8,979**
Service cost for pension entitlements earned in the respective year	3,902	3,907
Total long-term compensation	**6,921**	**12,886**
Severance indemnity in connection with the termination of a service contract	4,542	1,978
Aggregate compensation (IFRS)	**27,575**	**26,168**

In addition to the above compensation, actuarial gains of €245 thousand (2016: losses of €3,196 thousand) incurred in connection with pension obligations to the currently serving members of the Board of Management were recognized outside profit or loss. The losses in the previous year mainly resulted from the decline in the level of interest rates.

Pension payments to former members of the Board of Management and their surviving dependents in 2017 amounted to €12,758 thousand (2016: €12,800 thousand). The defined benefit obligation for former members of the Board of Management and their surviving dependents amounted to €184,479 thousand (2016: €188,850 thousand).

The compensation of the Supervisory Board amounted to €3,703 thousand (2016: €3,479 thousand).

In addition to their compensation as members of the Supervisory Board, those employee representatives who are employees of Bayer Group companies receive compensation unrelated to their service on the Supervisory Board. The total amount of such compensation in 2017 was €767 thousand (2016: €939 thousand).

Pension obligations for employee representatives on the Supervisory Board amounted to €3,941 thousand (2016: €4,399 thousand).

There were no advances or loans to members of the Board of Management or the Supervisory Board outstanding as of December 31, 2017, nor at any time during 2017 or 2016.

39. Events after the end of the reporting period

Sale of 10.4% of the shares in Covestro

On January 10, 2018, Bayer AG reduced its direct interest in Covestro from 24.6% to 14.2%. This was achieved by selling 21 million shares to institutional investors at a price of €86.25 per share. In addition to Bayer AG's direct stake in Covestro, Bayer Pension Trust holds a further 8.9%. As already announced, Bayer intends to achieve full separation from Covestro in the medium term.

The proceeds from the divestment of Covestro shares were largely used to reduce the syndicated credit facility arranged to finance the planned acquisition of Monsanto by US$1.8 billion to US$49.7 billion.

Divestments in conjunction with the planned acquisition of Monsanto

In connection with the proposed acquisition of Monsanto and related anti-trust clearance proceedings, Bayer has committed to divest its entire vegetable seed business, in addition to the sale of certain Crop Science businesses to BASF. Certain additional business activities of Bayer and Monsanto may also be sold or out-licensed. Through the move, Bayer is actively addressing observations expressed by anti-trust authorities. Any sales and licenses would be subject to a successful closing of the proposed acquisition of Monsanto, which remains subject to customary closing conditions, including receipt of required regulatory approvals.

Leverkusen, February 20, 2018

Bayer Aktiengesellschaft

The Board of Management

Responsibility Statement

To the best of our knowledge, and in accordance with the applicable reporting principles for financial reporting, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Bayer Group, and the combined management report includes a fair review of the development and performance of the business and the position of the Bayer Group and Bayer AG, together with a description of the principal opportunities and risks associated with the expected development of the Bayer Group and Bayer AG.

Leverkusen, February 20, 2018
Bayer Aktiengesellschaft

The Board of Management

Werner Baumann
Chairman

Liam Condon

Johannes Dietsch

Dr. Hartmut Klusik

Kemal Malik

Erica Mann

Dieter Weinand

Governance Bodies

Supervisory Board

Members of the Supervisory Board held offices as members of the supervisory board or a comparable supervising body of the corporations listed (as at December 31, 2017, or the date on which they ceased to be members of the Supervisory Board of Bayer AG) and as shown attended the meetings of the Supervisory Board and committees to which he or she belonged:

Werner Wenning
Leverkusen, Germany
(born October 21, 1946)

Chairman of the Supervisory Board effective October 2012

Chairman of the Supervisory Board of Bayer AG

Memberships on other supervisory boards:

- Henkel Management AG
- Siemens AG (Vice Chairman)

Memberships in comparable supervising bodies of German or foreign corporations:

- Henkel AG & Co. KGaA (Shareholders' Committee)

Attendance at Supervisory Board and committee meetings: 20 of 20

Oliver Zühlke
Solingen, Germany
(born December 11, 1968)

Vice Chairman of the Supervisory Board effective July 2015

Member of the Supervisory Board effective April 2007

Chairman of the Bayer Central Works Council

Memberships on other supervisory boards:

- Bayer Pharma AG (until January 2017)

Attendance at Supervisory Board and committee meetings: 15 of 15

Dr. Paul Achleitner
Munich, Germany
(born September 28, 1956)

Member of the Supervisory Board effective April 2002

Chairman of the Supervisory Board of Deutsche Bank AG

Memberships on other supervisory boards:

- Daimler AG
- Deutsche Bank AG (Chairman)

Memberships in comparable supervising bodies of German or foreign corporations:

- Henkel AG & Co. KGaA (Shareholders' Committee)

Attendance at Supervisory Board and committee meetings: 13 of 14

Dr. rer. nat. Simone Bagel-Trah
Düsseldorf, Germany
(born January 10, 1969)

Member of the Supervisory Board effective April 2014

Chairwoman of the Supervisory Board of Henkel AG & Co. KGaA and Henkel Management AG and of the Shareholders' Committee of Henkel AG & Co. KGaA

Memberships on other supervisory boards:

- Henkel AG & Co. KGaA (Chairwoman)
- Henkel Management AG (Chairwoman)
- Heraeus Holding GmbH

Memberships in comparable supervising bodies of German or foreign corporations:

- Henkel AG & Co. KGaA (Shareholders' Committee, Chairwoman)

Attendance at Supervisory Board meetings: 8 of 9

Dr. Norbert W. Bischofberger
Hillsborough, U.S.A.
(born January 10, 1956)

Member of the Supervisory Board effective April 2017

Executive Vice President Research & Development and Chief Scientific Officer of Gilead Sciences, Inc.

Memberships in comparable supervising bodies of German or foreign corporations:

- InCarda Therapeutics, Inc. (Board of Directors)

Attendance at Supervisory Board and committee meetings: 6 of 6

Dr. Clemens Börsig
Frankfurt am Main, Germany
(born July 27, 1948)

Member of the Supervisory Board until April 2017

Member of various supervisory boards

Memberships on other supervisory boards:

- Daimler AG
- Linde AG

Memberships in comparable supervising bodies of German or foreign corporations:

- Emerson Electric Co. (Board of Directors)

Attendance at Supervisory Board meetings: 3 of 3

André van Broich
Dormagen, Germany
(born June 19, 1970)

Member of the Supervisory Board effective April 2012

Chairman of the Bayer Group Works Council (effective September 2017)

Chairman of the Works Council of the Dormagen site

Memberships on other supervisory boards:

- Bayer CropScience AG (until January 2017)

Attendance at Supervisory Board and committee meetings: 14 of 14

Thomas Ebeling
Muri bei Bern, Switzerland
(born February 9, 1959)

Member of the Supervisory Board effective April 2012

Chief Executive Officer of ProSiebenSat.1 Media SE (until February 2018)

Memberships on other supervisory boards:

- GfK SE (effective April 2017)

Memberships in comparable supervising bodies of German or foreign corporations:

- Cullinan Oncology, LLC (Board of Directors) (effective November 2017)
- Lonza Group AG (until April 2017)

Attendance at Supervisory Board meetings: 7 of 9

Dr. Thomas Elsner
Düsseldorf, Germany
(born April 24, 1958)

Member of the Supervisory Board effective April 2017

Chairman of the Bayer Group Managerial Employees' Committee

Chairman of the Managerial Employees' Committee of Bayer AG Leverkusen

Attendance at Supervisory Board and committee meetings: 8 of 8

Johanna W. (Hanneke) Faber
Amstelveen, Netherlands
(born April 19, 1969)

Member of the Supervisory Board effective April 2016

Chief E-Commerce and Innovation Officer and Member of the Executive Committee of Koninklijke Ahold Delhaize N.V. (until December 2017)

President Europe at Unilever N.V. / plc (effective January 2018)

Attendance at Supervisory Board meetings: 6 of 9

Dr.-Ing. Thomas Fischer
Krefeld, Germany
(born August 27, 1955)

Member of the Supervisory Board until April 2017

Chairman of the Managerial Employees' Committee of Covestro Deutschland AG

Memberships on other supervisory boards:

- Covestro AG
- Covestro Deutschland AG

Attendance at Supervisory Board and committee meetings: 5 of 5

Colleen A. Goggins
Princeton, U.S.A.
(born September 9, 1954)

Member of the Supervisory Board effective April 2017

Independent consultant

Memberships in comparable supervising bodies of German or foreign corporations:

- The Toronto-Dominion Bank (Board of Directors)
- IQVIA Holdings Inc. (formerly QuintilesIMS Holdings, Inc.) (Board of Directors) (effective July 2017)

Attendance at Supervisory Board meetings: 6 of 6

Heike Hausfeld
Leverkusen, Germany
(born September 19, 1965)

Member of the Supervisory Board effective April 2017

Chairwoman of the Works Council of the Leverkusen site

Memberships on other supervisory boards:

- Bayer Business Services GmbH (Vice Chairwoman)

Attendance at Supervisory Board and committee meetings: 9 of 9

Reiner Hoffmann
Wuppertal, Germany
(born May 30, 1955)

Member of the Supervisory Board effective October 2006

Chairman of the German Trade Union Confederation

Attendance at Supervisory Board meetings: 8 of 9

Yüksel Karaaslan
Hohen Neuendorf, Germany
(born March 1, 1968, deceased June 4, 2017)

Member of the Supervisory Board until June 2017

Chairman of the Bayer Group Works Council

Vice Chairman of the Bayer Central Works Council

Chairman of the Works Council of the Berlin site

Memberships on other supervisory boards:

- Bayer Pharma AG (Vice Chairman) (until January 2017)

Attendance at Supervisory Board and committee meetings: 6 of 7

Petra Kronen
Krefeld, Germany
(born August 22, 1964)

Member of the Supervisory Board until September 2017

Chairwoman of the Central Works Council of Covestro

Chairwoman of the Works Council of Covestro of the Uerdingen site

Memberships on other supervisory boards:

- Covestro AG (Vice Chairwoman)
- Covestro Deutschland AG (Vice Chairwoman)

Attendance at Supervisory Board and committee meetings: 8 of 8

Frank Löllgen
Cologne, Germany
(born June 14, 1961)

Member of the Supervisory Board effective November 2015

North Rhine District Secretary of the German Mining, Chemical and Energy Industrial Union

Memberships on other supervisory boards:

- Evonik Industries AG
- IRR-Innovationsregion Rheinisches Revier GmbH

Attendance at Supervisory Board and committee meetings: 13 of 13

Prof. Dr. Wolfgang Plischke
Aschau im Chiemgau, Germany
(born September 15, 1951)

Member of the Supervisory Board effective April 2016

Independent consultant

Memberships on other supervisory boards:

- Evotec AG (Chairman)

Attendance at Supervisory Board and committee meetings: 15 of 15

Sue H. Rataj
Sebastopol, U.S.A.
(born January 8, 1957)

Member of the Supervisory Board until April 2017

Member of the Board of Directors of Cabot Corporation, Boston, U.S.A.

Member of the Board of Directors of Agilent Technologies Inc., Santa Clara, U.S.A.

Attendance at Supervisory Board meetings: 3 of 3

Petra Reinbold-Knape
Gladbeck, Germany
(born April 16, 1959)

Member of the Supervisory Board effective April 2012

Member of the Executive Committee of the German Mining, Chemical and Energy Industrial Union

Memberships on other supervisory boards:

- Lausitz Energie Bergbau AG (Vice Chairwoman)
- Lausitz Energie Kraftwerk AG (Vice Chairwoman effective March 2017)

Attendance at Supervisory Board and committee meetings: 11 of 11

Detlef Rennings
Krefeld, Germany
(born April 29, 1965)

Member of the Supervisory Board effective June 2017

Chairman of the Central Works Council of CURRENTA

Chairman of the Works Council of CURRENTA of the Uerdingen site

Memberships on other supervisory boards:

- Currenta Geschäftsführungs-GmbH

Attendance at Supervisory Board meetings: 4 of 4

Sabine Schaab
Wuppertal, Germany
(born June 25, 1966)

Member of the Supervisory Board effective October 2017

Vice Chairwoman of the Works Council of the Elberfeld site

Attendance at Supervisory Board and committee meetings: 3 of 3

Michael Schmidt-Kießling
Schwelm, Germany
(born March 24, 1959)

Member of the Supervisory Board effective April 2012

Chairman of the Works Council of the Elberfeld site

Attendance at Supervisory Board meetings: 8 of 9

Dr. Klaus Sturany*
Ascona, Switzerland
(born October 23, 1946)

Member of the Supervisory Board effective April 2007

Member of various supervisory boards

Memberships on other supervisory boards:

- Hannover Rück SE (Vice Chairman)

Attendance at Supervisory Board and committee meetings: 12 of 13

Heinz Georg Webers
Bergkamen, Germany
(born December 27, 1959)

Member of the Supervisory Board until April 2017

Chairman of the Bayer European Forum

Chairman of the Works Council of the Bergkamen site

Memberships on other supervisory boards:

- Bayer Pharma AG (until January 2017)

Attendance at Supervisory Board meetings: 3 of 3

Prof. Dr. Dr. h.c. Otmar D. Wiestler
Berlin, Germany
(born November 6, 1956)

Member of the Supervisory Board effective October 2014

President of the Helmholtz Association of German Research Centres

Attendance at Supervisory Board and committee meetings: 10 of 11

* Expert member pursuant to Section 100, Paragraph 5 of the German Stock Corporation Act (AktG)

Standing committees of the Supervisory Board of Bayer AG (as at December 31, 2017)

Presidial Committee / Mediation Committee
Wenning (Chairman), Achleitner, Reinbold-Knape, Zühlke

Audit Committee
Sturany* (Chairman), Elsner, Löllgen, Plischke, Wenning, Zühlke

Human Resources Committee
Wenning (Chairman), Achleitner, Hausfeld, van Broich

Nominations Committee
Wenning (Chairman), Achleitner

Innovation Committee
Plischke (Chairman), Bischofberger, van Broich, Reinbold-Knape, Schaab, Wenning, Wiestler, Zühlke

Board of Management

Members of the Board of Management held offices as members of the supervisory board or a comparable supervising body of the corporations listed (as at December 31, 2017):

Werner Baumann
(born October 6, 1962)
Chairman
Member of the Board of Management effective January 1, 2010, appointed until April 30, 2021

Liam Condon
(born February 27, 1968)
Member of the Board of Management effective January 1, 2016, appointed until December 31, 2018

Johannes Dietsch
(born January 2, 1962)
Member of the Board of Management effective September 1, 2014, appointed until May 31, 2018

- Bayer Business Services GmbH (Chairman)
- Bayer CropScience AG (Chairman) (until February 2017)
- Covestro AG
- Covestro Deutschland AG

Dr. Hartmut Klusik
(born July 30, 1956)
Member of the Board of Management effective January 1, 2016, appointed until December 31, 2018
Labor Director

- Bayer Pharma AG (Chairman) (until February 2017)
- Currenta Geschäftsführungs-GmbH (Chairman)

Kemal Malik
(born September 29, 1962)
Member of the Board of Management effective February 1, 2014, appointed until January 31, 2022

Erica Mann
(born October 11, 1958)
Member of the Board of Management effective January 1, 2016, appointed until March 31, 2018

Dieter Weinand
(born August 16, 1960)
Member of the Board of Management effective January 1, 2016, appointed until December 31, 2018

- HealthPrize Technologies LLC (Board of Directors)

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