Balance sheet disclosures

12. Intangible assets

CHANGES IN INTANGIBLE ASSETS IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2015

€ million	Brand names	Goodwill	Capitalized development costs for products under development	Capitalized development costs for products currently in use	Other intangible assets	Total
Cost						
Balance at Jan. 1, 2015	**17,045**	**23,577**	**6,428**	**21,409**	**8,292**	**76,752**
Foreign exchange differences	16	64	–27	52	–189	–85
Changes in consolidated Group	–	5	–	–	43	48
Additions	–	–	4,043	978	506	5,526
Transfers	–	–	–3,652	3,652	16	17
Disposals	–	–	11	2,410	138	2,559
Balance at Dec. 31, 2015	**17,062**	**23,646**	**6,781**	**23,681**	**8,529**	**79,699**
Amortization and impairment						
Balance at Jan. 1, 2015	**79**	**0**	**14**	**12,085**	**4,639**	**16,818**
Foreign exchange differences	–7	0	0	39	–83	–50
Changes in consolidated Group	–	–	–	–	14	14
Additions to cumulative amortization	4	–	–	3,098	989	4,091
Additions to cumulative impairment losses	–	–	31	133	21	186
Transfers	–	–	–8	8	–2	–2
Disposals	–	–	–	2,396	105	2,501
Reversal of impairment losses	–	–	–	1	–	1
Balance at Dec. 31, 2015	**76**	**–**	**37**	**12,968**	**5,472**	**18,553**
Carrying amount at Dec. 31, 2015	**16,986**	**23,646**	**6,744**	**10,713**	**3,058**	**61,147**

CHANGES IN INTANGIBLE ASSETS IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2016

€ million	Brand names	Goodwill	Capitalized development costs for products under development	Capitalized development costs for products currently in use	Other intangible assets	Total
Cost						
Balance at Jan. 1, 2016	**17,062**	**23,646**	**6,781**	**23,681**	**8,529**	**79,699**
Foreign exchange differences	–37	–86	–12	–90	137	–89
Changes in consolidated Group	–	9	–	–	29	37
Additions	–	–	4,857	893	385	6,135
Transfers	–	–	–4,324	4,324	12	12
Disposals	–	10	17	1,442	456	1,925
Balance at Dec. 31, 2016	**17,024**	**23,559**	**7,285**	**27,366**	**8,637**	**83,870**
Amortization and impairment						
Balance at Jan. 1, 2016	**76**	**–**	**37**	**12,968**	**5,472**	**18,553**
Foreign exchange differences	5	0	0	–80	84	9
Changes in consolidated Group	–	–	–	–	7	7
Additions to cumulative amortization	3	–	–	3,278	906	4,187
Additions to cumulative impairment losses	–	10	16	293	55	375
Transfers	–	–	0	–	–3	–3
Disposals	–	10	14	1,419	412	1,855
Reversal of impairment losses	–	–	–	1	0	1
Balance at Dec. 31, 2016	**84**	**0**	**39**	**15,040**	**6,109**	**21,271**
Carrying amount at Dec. 31, 2016	**16,941**	**23,558**	**7,246**	**12,326**	**2,527**	**62,599**

Other intangible assets comprise in particular concessions, purchased customer lists and dealer relationships, industrial and similar rights, and licenses in such rights and assets.

The allocation of the brand names and goodwill to the operating segments is shown in the following table:

€ million	2016	2015
Brand names by operating segment		
Porsche	13,823	13,823
Scania Vehicles and Services	1,017	1,059
MAN Truck & Bus	1,127	1,127
MAN Diesel & Turbo	415	415
Ducati	404	404
Other	155	158
	16,941	**16,986**
Goodwill by operating segment		
Porsche	18,825	18,825
Scania Vehicles and Services	2,947	3,044
MAN Truck & Bus	608	607
MAN Diesel & Turbo	249	250
Ducati	290	290
ŠKODA	150	150
Porsche Holding Salzburg	197	197
Other	293	284
	23,558	**23,646**

The impairment test for recognized goodwill is based on value in use. Recoverability is not affected by a variation in the growth forecast with respect to the perpetual annuity or in the discount rate of +/–0.5 percentage points.

Research and development costs developed as follows:

€ million	2016	2015	%
Total research and development costs	13,672	13,612	0.4
of which: capitalized development costs	5,750	5,021	14.5
Capitalization ratio in %	42.1	36.9	–
Amortization of capitalized development costs	3,587	3,263	10.0
Research and development costs recognized in profit or loss	**11,509**	**11,853**	**–2.9**

13. Property, plant and equipment

CHANGES IN PROPERTY, PLANT AND EQUIPMENT IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2015

€ million	Land, land rights and buildings, including buildings on third-party land	Technical equipment and machinery	Other equipment, operating and office equipment	Payments on account and assets under construction	Total
Cost					
Balance at Jan. 1, 2015	**28,489**	**37,873**	**53,922**	**6,607**	**126,890**
Foreign exchange differences	35	22	56	113	226
Changes in consolidated Group	129	37	44	0	210
Additions	992	1,777	4,283	5,748	12,800
Transfers	1,565	1,746	1,383	–4,713	–18
Disposals	173	1,620	1,446	38	3,277
Balance at Dec. 31, 2015	**31,036**	**39,836**	**58,243**	**7,717**	**136,832**
Depreciation and impairment					
Balance at Jan. 1, 2015	**11,906**	**26,779**	**42,000**	**36**	**80,721**
Foreign exchange differences	12	29	35	–6	69
Changes in consolidated Group	44	33	38	–	115
Additions to cumulative depreciation	948	2,691	4,539	–	8,178
Additions to cumulative impairment losses	6	107	382	58	553
Transfers	–1	71	–65	–1	3
Disposals	125	1,561	1,284	0	2,970
Reversal of impairment losses	0	1	1	7	10
Balance at Dec. 31, 2015	**12,789**	**28,148**	**45,645**	**79**	**86,661**
Carrying amount at Dec. 31, 2015	**18,247**	**11,688**	**12,597**	**7,638**	**50,171**
of which assets leased under finance leases Carrying amount at Dec. 31, 2015	345	12	36	–	393

Future finance lease payments due, and their present values, are shown in the following table:

€ million	2016	2017 – 2020	from 2021	Total
Finance lease payments	60	240	408	707
Interest component of finance lease payments	20	67	149	236
Carrying amount of liabilites	**40**	**173**	**258**	**471**

CHANGES IN PROPERTY, PLANT AND EQUIPMENT IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2016

€ million	Land, land rights and buildings, including buildings on third-party land	Technical equipment and machinery	Other equipment, operating and office equipment	Payments on account and assets under construction	Total
Cost					
Balance at Jan. 1, 2016	**31,036**	**39,836**	**58,243**	**7,717**	**136,832**
Foreign exchange differences	228	429	498	51	1,206
Changes in consolidated Group	42	26	30	1	98
Additions	742	1,843	5,150	5,025	12,760
Transfers	1,639	2,296	1,879	–5,758	55
Disposals	154	1,076	1,203	28	2,461
Balance at Dec. 31, 2016	**33,534**	**43,353**	**64,595**	**7,008**	**148,490**
Depreciation and impairment					
Balance at Jan. 1, 2016	**12,789**	**28,148**	**45,645**	**79**	**86,661**
Foreign exchange differences	90	305	397	5	796
Changes in consolidated Group	6	14	16	–	36
Additions to cumulative depreciation	1,000	2,918	4,707	–	8,625
Additions to cumulative impairment losses	67	143	291	8	508
Transfers	17	21	15	–46	7
Disposals	81	1,011	1,071	0	2,164
Reversal of impairment losses	–	7	0	7	13
Balance at Dec. 31, 2016	**13,887**	**30,531**	**49,999**	**39**	**94,456**
Carrying amount at Dec. 31, 2016	**19,647**	**12,822**	**14,596**	**6,969**	**54,033**
of which assets leased under finance leases Carrying amount at Dec. 31, 2016	318	9	45	–	372

Options to purchase buildings and plant leased under the terms of finance leases exist in most cases, and are also expected to be exercised.

Future finance lease payments due, and their present values, are shown in the following table:

€ million	2017	2018 – 2021	from 2022	Total
Finance lease payments	79	306	480	865
Interest component of finance lease payments	26	100	200	326
Carrying amount of liabilites	**53**	**206**	**279**	**539**

For assets leased under operating leases, payments recognized in the income statement amounted to €1,498 million (previous year: €1,463 million). With respect to internally used assets, €1,320 million (previous year: €1,306 million) of this figure is attributable to minimum lease payments and €60 million (previous year: €51 million) to contingent lease payments. The payments of €118 million (previous year: €106 million) under subleases primarily relate to minimum lease payments.

Government grants of €218 million (previous year: €120 million) were deducted from the cost of property, plant and equipment and noncash benefits received amounting to €12 million (previous year: €18 million) were not capitalized as the cost of assets.

Real property liens of €762 million (previous year: €657 million) are pledged as collateral for financial liabilities related to land and buildings.

14. Lease assets and investment property

CHANGES IN LEASE ASSETS AND INVESTMENT PROPERTY IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2015

€ million	Leasing assets	Investment property	Total
Cost Balance at Jan. 1, 2015	**36,780**	**736**	**37,516**
Foreign exchange differences	1,750	23	1,773
Changes in consolidated Group	10	1	11
Additions	18,265	15	18,280
Transfers	0	2	2
Disposals	11,687	16	11,702
Balance at Dec. 31, 2015	**45,118**	**761**	**45,879**
Depreciation and impairment Balance at Jan. 1, 2015	**9,195**	**251**	**9,446**
Foreign exchange differences	411	4	415
Changes in consolidated Group	3	1	4
Additions to cumulative depreciation	6,035	15	6,050
Additions to cumulative impairment losses	619	–	619
Transfers	0	–1	–1
Disposals	4,315	5	4,321
Reversal of impairment losses	3	8	10
Balance at Dec. 31, 2015	**11,945**	**257**	**12,202**
Carrying amount at Dec. 31, 2015	**33,173**	**504**	**33,677**

The following payments from noncancelable leases and rental agreements were expected to be received over the coming years:

€ million	2016	2017 – 2020	from 2021	Total
Lease payments	3,722	4,398	42	8,162

CHANGES IN LEASE ASSETS AND INVESTMENT PROPERTY IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2016

€ million	Leasing assets	Investment property	Total
Cost Balance at Jan. 1, 2016	**45,118**	**761**	**45,879**
Foreign exchange differences	321	12	333
Changes in consolidated Group	64	66	130
Additions	20,628	33	20,661
Transfers	3	–70	–67
Disposals	14,652	21	14,673
Balance at Dec. 31, 2016	**51,483**	**780**	**52,262**
Depreciation and impairment Balance at Jan. 1, 2016	**11,945**	**257**	**12,202**
Foreign exchange differences	74	2	76
Changes in consolidated Group	15	1	16
Additions to cumulative depreciation	6,743	17	6,760
Additions to cumulative impairment losses	455	0	455
Transfers	0	–4	–4
Disposals	6,097	4	6,101
Reversal of impairment losses	92	–	92
Balance at Dec. 31, 2016	**13,044**	**268**	**13,312**
Carrying amount at Dec. 31, 2016	**38,439**	**512**	**38,950**

Lease assets include assets leased out under the terms of operating leases and assets covered by long-term buy-back agreements.

Investment property includes apartments rented out and leased dealerships with a fair value of €1,150 million (previous year: €927 million). Fair value is estimated using an investment method based on internal calculations (Level 3 of the fair value hierarchy). Operating expenses of €46 million (previous year: €50 million) were incurred for the maintenance of investment property in use. Expenses of €1 million (previous year: €1 million) were incurred for unused investment property.

The following payments from noncancelable leases and rental agreements are expected to be received over the coming years:

€ million	2017	2018 – 2021	from 2022	Total
Lease payments	3,649	4,759	56	8,464

15. Equity-accounted investments and other equity investments

CHANGES IN EQUITY-ACCOUNTED INVESTMENTS AND OTHER EQUITY INVESTMENTS IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2015

€ million	Equity-accounted investments	Other equity investments	Total
Gross carrying amount at Jan. 1, 2015	**9,955**	**4,014**	**13,968**
Foreign exchange differences	187	9	197
Changes in consolidated Group	–	–67	–67
Additions	740	253	993
Transfers	44	–44	–
Disposals	36	3,174	3,210
Changes recognized in profit or loss	4,386	–	4,386
Dividends	–4,683	–	–4,683
Other changes recognized in other comprehensive income	392	342	733
Balance at Dec. 31, 2015	**10,985**	**1,333**	**12,318**
Impairment losses Balance at Jan. 1, 2015	**80**	**331**	**411**
Foreign exchange differences	1	–2	–2
Changes in consolidated Group	–	–3	–3
Additions	–	38	38
Transfers	–	–	–
Disposals	–	4	4
Reversal of impairment losses	–	0	0
Balance at Dec. 31, 2015	**81**	**358**	**439**
Carrying amount at Dec. 31, 2015	**10,904**	**974**	**11,878**

CHANGES IN EQUITY-ACCOUNTED INVESTMENTS AND OTHER EQUITY INVESTMENTS IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2016

€ million	Equity-accounted investments	Other equity investments	Total
Gross carrying amount at Jan. 1, 2016	**10,985**	**1,333**	**12,318**
Foreign exchange differences	–100	–1	–101
Changes in consolidated Group	–11	–103	–114
Additions	525	191	716
Transfers	–	–	–
Disposals	2,193	3	2,197
Changes recognized in profit or loss	3,250	–	3,250
Dividends	–3,598	–	–3,598
Other changes recognized in other comprehensive income	–131	–	–131
Balance at Dec. 31, 2016	**8,727**	**1,417**	**10,143**
Impairment losses Balance at Jan. 1, 2016	**81**	**358**	**439**
Foreign exchange differences	–1	1	0
Changes in consolidated Group	–	–57	–57
Additions	30	120	150
Transfers	–	–	–
Disposals	–	1	1
Reversal of impairment losses	–	0	0
Balance at Dec. 31, 2016	**110**	**420**	**531**
Carrying amount at Dec. 31, 2016	**8,616**	**996**	**9,613**

Equity-accounted investments include joint ventures in the amount of €7,068 million (previous year: €9,546 million) and associates in the amount of €1,548 million (previous year: €1,358 million).

The additions of equity-accounted investments are mainly attributable to the acquisition of the investment in Gett in the amount of €0.3 billion (previous year: There Holding) and to the measurement of the shares in GMH at the selling price in the amount of €0.2 billion. The disposals in the current year are connected with the divestment of LeasePlan by GMH. In the previous year, the disposals of other equity investments were mainly the result of the sale of the Suzuki shares. Further details can be found in the disclosures in the section entitled "Basis of consolidation".

Of the other changes recognized in other comprehensive income, €–132 million (previous year: €391 million) is attributable to joint ventures and €1 million (previous year: €1 million) to associates. They are mainly the result of foreign exchange differences in the amount of €–156 million (previous year: €393 million), pension plan remeasurements in the amount of €–1 million (previous year: €–8 million) and losses on the fair value measurement of cash flow hedges in the amount of €33 million (previous year: €6 million).

16. Noncurrent and current financial services receivables

€ million	Carrying amount			Fair value	Carrying amount			Fair value
	Current	Noncurrent	Dec. 31, 2016	Dec. 31, 2016	Current	Noncurrent	Dec. 31, 2015	Dec. 31, 2015
Receivables from financing business								
Customer financing	22,921	47,863	70,784	73,507	21,991	44,985	66,976	68,452
Dealer financing	15,531	2,108	17,639	17,626	14,738	1,832	16,570	16,539
Direct banking	254	2	256	256	212	2	214	214
	38,707	**49,973**	**88,680**	**91,389**	**36,941**	**46,819**	**83,760**	**85,205**
Receivables from operating leases	197	–	197	197	273	–	273	273
Receivables from finance leases	10,769	18,429	29,198	29,342	9,674	16,365	26,040	26,041
	49,673	**68,402**	**118,075**	**120,929**	**46,888**	**63,185**	**110,073**	**111,518**

The receivables from customer financing and finance leases contained in financial services receivables of €118.1 billion (previous year: €110.1 billion) decreased by €7 million (previous year: €18 million) as a result of a fair value adjustment from portfolio hedging.

The receivables from customer and dealer financing are secured by vehicles or real property liens. Of the receivables, €251 million (previous year: €– million) was furnished as collateral for financial liabilities and contingent liabilities.

The receivables from dealer financing include €51 million (previous year: €45 million) receivable from unconsolidated affiliated companies.

The receivables from finance leases – almost entirely in respect of vehicles – were or are expected to generate the following cash flows as of December 31, 2015 and December 31, 2016:

€ million	2016	2017 – 2020	from 2021	Total
Future payments from finance lease receivables	10,320	17,184	135	27,639
Unearned finance income from finance leases (discounting)	–646	–949	–4	–1,600
Present value of minimum lease payments outstanding at the reporting date	**9,674**	**16,234**	**131**	**26,040**

€ million	2017	2018 – 2021	from 2022	Total
Future payments from finance lease receivables	11,438	19,316	137	30,891
Unearned finance income from finance leases (discounting)	–670	–1,014	–11	–1,695
Present value of minimum lease payments outstanding at the reporting date	**10,768**	**18,302**	**126**	**29,196**

Accumulated valuation allowances for uncollectible minimum lease payments receivable amount to €94 million (previous year: €90 million).

17. Noncurrent and current other financial assets

€ million	Carrying amount			Carrying amount		
	Current	Noncurrent	Dec. 31, 2016	Current	Noncurrent	Dec. 31, 2015
Positive fair value of derivatives	2,317	3,274	5,591	2,081	2,246	4,326
Marketable securities	–	46	46	–	1,387	1,387
Receivables from loans, bonds, profit participation rights (excluding interest)	5,352	2,338	7,690	4,286	2,169	6,455
Miscellaneous financial assets	4,175	2,598	6,773	3,677	928	4,604
	11,844	**8,256**	**20,099**	**10,043**	**6,730**	**16,773**

Other financial assets include receivables from related parties of €6,928 million (previous year: €6,010 million). Other financial assets and noncurrent marketable securities amounting to €1,870 million (previous year: €1,897 million) were furnished as collateral for financial liabilities and contingent liabilities. There is no original right of disposal or pledge for the furnished collateral on the part of the collateral taker.

In addition, the miscellaneous financial assets include cash and cash equivalents that serve as collateral (mainly under asset-backed securities transactions).

The positive fair values of derivatives relate to the following items:

€ million	Dec. 31, 2016	Dec. 31, 2015
Transactions for hedging		
foreign currency risk from assets using fair value hedges	239	310
foreign currency risk from liabilities using fair value hedges	186	190
interest rate risk using fair value hedges	592	681
interest rate risk using cash flow hedges	65	19
foreign currency and price risk from future cash flows (cash flow hedges)	3,032	1,735
Hedging transactions	**4,114**	**2,936**
Assets related to derivatives not included in hedging relationships	1,477	1,391
	5,591	**4,326**

The positive fair value of transactions for hedging price risk from future cash flows (cash flow hedges) amounted to €36 million (previous year: €0 million).

Positive fair values of €1 million (previous year: €1 million) were recognized from transactions for hedging interest rate risk (fair value hedges) used in portfolio hedges.

Further details on derivative financial instruments as a whole are given in section entitled “Financial risk management and financial instruments”.

18. Noncurrent and current other receivables

€ million	Carrying amount Current	Carrying amount Noncurrent	Dec. 31, 2016	Carrying amount Current	Carrying amount Noncurrent	Dec. 31, 2015
Other recoverable income taxes	4,037	841	4,878	3,930	259	4,189
Miscellaneous receivables	1,093	1,169	2,261	1,438	1,081	2,518
	5,130	**2,009**	**7,139**	**5,367**	**1,340**	**6,707**

Miscellaneous receivables include assets to fund post-employment benefits in the amount of €46 million (previous year: €71 million). This item also includes the share of the technical provisions attributable to reinsurers amounting to €73 million (previous year: €78 million).

Current other receivables are predominantly non-interest-bearing.

19. Tax assets

€ million	Carrying amount Current	Carrying amount Noncurrent	Dec. 31, 2016	Carrying amount Current	Carrying amount Noncurrent	Dec. 31, 2015
Deferred tax assets	–	9,756	9,756	–	8,026	8,026
Tax receivables	1,126	392	1,518	1,029	395	1,424
	1,126	**10,148**	**11,274**	**1,029**	**8,421**	**9,451**

€6,294 million (previous year: €6,239 million) of the deferred tax assets are due within one year.

20. Inventories

€ million	Dec. 31, 2016	Dec. 31, 2015
Raw materials, consumables and supplies	4,396	4,021
Work in progress	4,408	3,927
Finished goods and purchased merchandise	25,719	23,083
Current lease assets	4,276	3,861
Prepayments	178	156
	38,978	**35,048**

At the same time as the relevant revenue was recognized, inventories in the amount of €166 billion (previous year: €162 billion) were included in cost of sales. Valuation allowances recognized as expenses in the reporting period amounted to €1,310 million (previous year: €932 million). Vehicles amounting to €263 million (previous year: €230 million) were assigned as collateral for partial retirement obligations.

21. Trade receivables

€ million	Dec. 31, 2016	Dec. 31, 2015
Trade receivables from		
third parties	9,110	8,570
unconsolidated subsidiaries	179	265
joint ventures	2,847	2,253
associates	47	40
other investees and investors	4	5
	12,187	**11,132**

The fair values of the trade receivables correspond to the carrying amounts.

The trade receivables include receivables from construction contracts accounted for using the percentage of completion (PoC) method. These are calculated as follows:

€ million	Dec. 31, 2016	Dec. 31, 2015
Contract costs and proportionate contract profit/loss of construction contracts	955	1,236
Progress billings	–91	–41
Exchange rate effects	2	–4
PoC receivables, gross	**865**	**1,191**
Prepayments received	–652	–969
PoC receivables, net	**213**	**222**

Other payments received on account of construction contracts in the amount of €225 million (previous year: €344 million), for which no construction costs have yet been incurred, are recognized under other liabilities.

22. Marketable securities

The marketable securities serve to safeguard liquidity. Marketable securities are quoted, mainly short-term fixed-income securities and shares allocated to the available-for-sale financial assets category.

23. Cash, cash equivalents and time deposits

€ million	Dec. 31, 2016	Dec. 31, 2015
Bank balances	19,093	20,656
Checks, cash-in-hand, bills and call deposits	171	216
	19,265	**20,871**

Bank balances are held at various banks in different currencies and include time deposits, for example.

24. Equity

The subscribed capital of Volkswagen AG is composed of no-par value bearer shares with a notional value of €2.56. As well as ordinary shares, there are preferred shares that entitle the bearer to a €0.06 higher dividend than ordinary shares, but do not carry voting rights.

The Annual General Meeting on April 19, 2012 resolved to create authorized capital of up to €110 million, expiring on April 18, 2017, for the issue of new ordinary bearer shares or preferred shares based. After deducting preferred shares that have already been issued, only €83 million of authorized capital remains. In 2014, Volkswagen AG recorded a cash inflow of €2,000 million from the capital increase, less transaction costs of €20 million.

The Annual General Meeting on April 22, 2010 resolved to create contingent capital in the amount of up to €102 million expiring on April 21, 2015 that could be used to issue up to €5 billion in bonds with warrants and/or convertible bonds.
To date, Volkswagen has used this contingent capital as follows:

- In November 2012, via a subsidiary, Volkswagen International Finance N.V. Amsterdam, the Netherlands (issuer), Volkswagen AG placed a €2.5 billion mandatory convertible note that entitled and obliged holders to subscribe for Volkswagen preferred shares. The preemptive rights of existing shareholders were disapplied. The convertible note bore a coupon of 5.50% and matured on November 9, 2015.
- In June 2013, Volkswagen placed another €1.2 billion mandatory convertible note to supplement the mandatory convertible note issued in November 2012. The features of this mandatory convertible note corresponded to those of the mandatory convertible note issued in November 2012. It was issued at a price of 105.64% of the principal amount. Additionally, accrued interest (€1 million) was received and deferred. This mandatory convertible note also matured on November 9, 2015.

The convertible notes were settled by issuing new preferred shares no later than at maturity. The issuer was entitled to convert the mandatory convertible notes at any time at the minimum conversion price. The note terms and conditions also provided for early conversion options. This voluntary conversion right was exercised in the previous year. In 2015, a further 27,091 preferred shares were created through exercise of the voluntary conversion right. At the maturity date, November 9, 2015, the remaining amount of both notes was converted by the issuer as required. A further 25,536,876 new preferred shares were created and the underlying principal amount of each bond was €100,000 and the final conversion price €144.50. In this context, it was necessary to reclassify the principal amount of €65 million from the capital reserves to subscribed capital.

Following the voluntary and mandatory conversion of mandatory convertible notes in the previous year, the subscribed capital is composed of 295,089,818 no-par value ordinary shares and 206,205,445 no-par value preferred shares, and amounts to €1,283 million (December 31, 2015: €1,283 million).

The Annual General Meeting on May 5, 2015 resolved to create authorized capital of up to €179 million, expiring on May 4, 2020, to issue new preferred bearer shares.

In March 2015, Volkswagen AG placed unsecured subordinated hybrid notes with an aggregate principal amount of €2.5 billion via a subsidiary, Volkswagen International Finance N.V. Amsterdam, the Netherlands (VIF). The perpetual hybrid notes were issued in two tranches and can be called by VIF. The first call date for the first tranche (€1.1 billion and a coupon of 2.50%) is after seven years, and the first call date for the second tranche (€1.4 billion and a coupon of 3.50%) is after 15 years. Interest may be accumulated depending on whether a dividend is paid to Volkswagen AG shareholders. Under IAS 32, the hybrid notes must be classified in their entirety as equity. The capital raised was recognized in equity, less a discount and transaction costs and net of deferred taxes. The interest payments payable to the noteholders will be recognized directly in equity, net of income taxes.

CHANGE IN ORDINARY AND PREFERRED SHARES AND SUBSCRIBED CAPITAL

	SHARES		€	
	2016	2015	2016	2015
Balance at January 1	**501,295,263**	**475,731,296**	**1,283,315,873**	**1,217,872,118**
Capital increase	–	–	–	–
Conversion of mandatory convertible notes	–	25,563,967	–	65,443,756
Balance at December 31	**501,295,263**	**501,295,263**	**1,283,315,873**	**1,283,315,873**

The capital reserves comprise the share premium totaling €14,225 million (previous year: €14,225 million) from capital increases, the share premium of €219 million from the issuance of bonds with warrants and an amount of €107 million appropriated on the basis of the capital reduction implemented in 2006. As the mandatory convertible notes that had been issued were converted in fiscal year 2015, an amount of €65,443,756 was reclassified from the capital reserves to subscribed capital (see also the section entitled “Earnings per share”). No amounts were withdrawn from the capital reserves.

DIVIDEND PROPOSAL

In accordance with section 58(2) of the Aktiengesetz (AktG – German Stock Corporation Act), the dividend payment by Volkswagen AG is based on the net retained profits reported in the annual financial statements of Volkswagen AG prepared in accordance with the German Commercial Code. Based on these annual financial statements of Volkswagen AG, net retained profits of €1,402 million are eligible for distribution following the transfer of €1,399 million to the revenue reserves. The Board of Management and Supervisory Board will propose to the Annual General Meeting that a total dividend of €1,015 million, i.e. €2.00 per ordinary share and €2.06 per preferred share, be paid from the net retained profits. Shareholders are not entitled to a dividend payment until it has been resolved by the Annual General Meeting.

A dividend of €0.11 per ordinary share and €0.17 per preferred share was distributed in fiscal year 2016.

NONCONTROLLING INTERESTS

As of December 31, 2016, total noncontrolling interests amounted to €221 million (previous year: €210 million). The noncontrolling interests in equity are attributable primarily to shareholders of RENK AG and AUDI AG and are immaterial individually and in the aggregate.

25. Noncurrent and current financial liabilities

The details of noncurrent and current financial liabilities are presented in the following table:

	CARRYING AMOUNT			CARRYING AMOUNT		
€ million	Current	Noncurrent	Dec. 31, 2016	Current	Noncurrent	Dec. 31, 2015
Bonds	18,831	33,191	52,022	19,891	42,454	62,346
Commercial paper and notes	23,173	18,004	41,178	10,428	16,369	26,797
Liabilities to banks	14,180	10,816	24,996	16,018	11,101	27,119
Deposits business	31,019	2,759	33,779	25,357	1,141	26,498
Loans and miscellaneous liabilities	1,204	1,102	2,306	578	1,795	2,373
Bills of exchange	–	–	–	–	–	–
Finance lease liabilities	53	486	539	40	431	471
	88,461	**66,358**	**154,819**	**72,313**	**73,292**	**145,604**

26. Noncurrent and current other financial liabilities

	CARRYING AMOUNT			CARRYING AMOUNT		
€ million	Current	Noncurrent	Dec. 31, 2016	Current	Noncurrent	Dec. 31, 2015
Negative fair values of derivative financial instruments	3,428	2,630	6,058	4,799	3,905	8,703
Interest payable	581	48	630	668	70	739
Miscellaneous financial liabilities	5,428	1,810	7,239	4,883	1,926	6,809
	9,438	**4,488**	**13,926**	**10,350**	**5,901**	**16,251**

The negative fair values of derivatives relate to the following items:

€ million	Dec. 31, 2016	Dec. 31, 2015
Transactions for hedging		
foreign currency risk from assets using fair value hedges	74	71
foreign currency risk from liabilities using fair value hedges	286	106
interest rate risk using fair value hedges	147	71
interest rate risk using cash flow hedges	11	16
foreign currency and price risk from future cash flows (cash flow hedges)	4,135	6,970
Hedging transactions	**4,652**	**7,234**
Liabilities related to derivatives not included in hedging relationships	1,406	1,469
	6,058	**8,703**

The negative fair value of transactions for hedging price risk from future cash flows (cash flow hedges) amounted to €21 million (previous year: €166 million).

Negative fair values of €85 million (previous year: €44 million) were recognized from transactions for hedging interest rate risk (fair value hedges) used in portfolio hedges.

Further details on derivative financial instruments as a whole are given in the section entitled “Financial risk management and financial instruments".

27. Noncurrent and current other liabilities

	CARRYING AMOUNT			CARRYING AMOUNT		
€ million	Current	Noncurrent	Dec. 31, 2016	Current	Noncurrent	Dec. 31, 2015
Payments received on account of orders	4,042	572	4,614	3,994	150	4,144
Liabilities relating to						
other taxes	2,611	204	2,815	1,973	435	2,408
social security	536	35	571	486	29	515
wages and salaries	4,495	750	5,245	4,293	663	4,956
Miscellaneous liabilities	3,777	4,103	7,880	3,267	3,628	6,896
	15,461	**5,664**	**21,125**	**14,014**	**4,905**	**18,919**

28. Tax liabilities

€ million	CARRYING AMOUNT Current	Noncurrent	Dec. 31, 2016	CARRYING AMOUNT Current	Noncurrent	Dec. 31, 2015
Deferred tax liabilities	–	4,745	4,745	–	4,433	4,433
Provisions for taxes	1,301	3,556	4,857	1,301	3,940	5,241
Tax payables	500	–	500	330	–	330
	1,801	**8,301**	**10,102**	**1,630**	**8,373**	**10,004**

€328 million (€369 million) of the deferred tax liabilities are due within one year.

29. Provisions for pensions and other post-employment benefits

Provisions for pensions are recognized for commitments in the form of retirement, invalidity and dependents' benefits payable under pension plans. The benefits provided by the Group vary according to the legal, tax and economic circumstances of the country concerned, and usually depend on the length of service and remuneration of the employees.

Volkswagen Group companies provide occupational pensions under both defined contribution and defined benefit plans. In the case of defined contribution plans, the Company makes contributions to state or private pension schemes based on legal or contractual requirements, or on a voluntary basis. Once the contributions have been paid, there are no further obligations for the Volkswagen Group. Current contributions are recognized as pension expenses of the period concerned. In 2016, they amounted to a total of €2,084 million (previous year: €1,978 million) in the Volkswagen Group. Of this figure, contributions to the compulsory state pension system in Germany amounted to €1,552 million (previous year: €1,500 million).

In the case of defined benefit plans, a distinction is made between pensions funded by provisions and externally funded plans.

The pension provisions for defined benefits are measured by independent actuaries using the internationally accepted projected unit credit method in accordance with IAS 19, under which the future obligations are measured on the basis of the ratable benefit entitlements earned as of the balance sheet date. Measurement reflects actuarial assumptions as to discount rates, salary and pension trends, employee turnover rates, longevity and increases in healthcare costs, which were determined for each Group company depending on the economic environment. Remeasurements arise from differences between what has actually occurred and the prior-year assumptions as well as from changes in assumptions. They are recognized in other comprehensive income, net of deferred taxes, in the period in which they arise.

Multi-employer pension plans exist in the Volkswagen Group in the United Kingdom, Switzerland, Sweden, the Netherlands and Japan. These plans are defined benefit plans. A small proportion of them are accounted for as defined contribution plans, as the Volkswagen Group is not authorized to receive the information required in order to account for them as defined benefit plans. Under the terms of the multi-employer plans, the Volkswagen Group is not liable for the obligations of the other employers. In the event of its withdrawal from the plans or their winding-up, the proportionate share of the surplus of assets attributable to the Volkswagen Group will be credited or the proportionate share of the deficit attributable to the Volkswagen Group will have to be funded. In the case of the defined benefit plans accounted for as defined contribution plans, the Volkswagen Group's share of the obligations represents a small proportion of the total obligations. No probable significant risks arising from multi-employer defined benefit pension plans that are accounted for as defined contribution plans have been identified. The expected contributions to those plans will amount to €25 million for fiscal year 2017.

Owing to their benefit character, the obligations of the US Group companies in respect of post-employment medical care in particular are also carried under provisions for pensions and other post-employment benefits. These post-employment benefit provisions take into account the expected long-term rise in the cost of healthcare. In fiscal year 2016, €19 million (previous year: €19 million) was recognized as an expense for health care costs. The related carrying amount as of December 31, 2016 was €232 million (previous year: €222 million).

The following amounts were recognized in the balance sheet for defined benefit plans:

€ million	Dec. 31, 2016	Dec. 31, 2015
Present value of funded obligations	15,104	12,098
Fair value of plan assets	10,749	9,769
Funded status (net)	4,355	2,329
Present value of unfunded obligations	28,585	25,118
Amount not recognized as an asset because of the ceiling in IAS 19	26	17
Net liability recognized in the balance sheet	**32,967**	**27,464**
of which provisions for pensions	33,012	27,535
of which other assets	46	71

SIGNIFICANT PENSION ARRANGEMENTS IN THE VOLKSWAGEN GROUP

For the period after their active working life, the Volkswagen Group offers its employees benefits under attractive, modern occupational pension arrangements. Most of the arrangements in the Volkswagen Group are pension plans for employees in Germany classified as defined benefit plans under IAS 19. The majority of these obligations are funded solely by recognized provisions. These plans are now largely closed to new members. To reduce the risks associated with defined benefit plans, in particular longevity, salary increases and inflation, the Volkswagen Group has introduced new defined benefit plans in recent years whose benefits are funded by appropriate external plan assets. The above-mentioned risks have been largely reduced in these pension plans. The proportion of the total defined benefit obligation attributable to pension obligations funded by plan assets will continue to rise in the future. The significant pension plans are described in the following.

German pension plans funded solely by recognized provisions

The pension plans funded solely by recognized provisions comprise both contribution-based plans with guarantees and final salary plans. For contribution-based plans, an annual pension expense dependent on income and status is converted into a lifelong pension entitlement using annuity factors (guaranteed modular pension entitlements). The annuity factors include a guaranteed rate of interest. At retirement, the modular pension entitlements earned annually are added together. For final salary plans, the underlying salary is multiplied at retirement by a percentage that depends on the years of service up until the retirement date.

The present value of the guaranteed obligation rises as interest rates fall and is therefore exposed to interest rate risk.

The pension system provides for lifelong pension payments. The companies bear the longevity risk in this respect. This is accounted for by calculating the annuity factors and the present value of the guaranteed obligation using the latest generational mortality tables – the “Heubeck 2005 G” mortality tables – which already reflect future increases in life expectancy.

To reduce the inflation risk from adjusting the regular pension payments by the rate of inflation, a pension adjustment that is not indexed to inflation was introduced for pension plans where this is permitted by law.

German pension plans funded by external plan assets

The pension plans funded by external plan assets are contribution-based plans with guarantees. In this case, an annual pension expense dependent on income and status is either converted into a lifelong pension entitlement using annuity factors (guaranteed modular pension entitlement) or paid out in a single lump sum or in installments. In some cases, employees also have the opportunity to provide for their own retirement through deferred compensation. The annuity factors include a guaranteed rate of interest. At retirement, the modular pension entitlements earned annually are added together. The pension expense is contributed on an ongoing basis to a separate pool of assets that is administered independently of the Company in trust and invested in the capital markets. If the plan assets exceed the present value of the obligations calculated using the guaranteed rate of interest, surpluses are allocated (modular pension bonuses).

Since the assets administered in trust meet the IAS 19 criteria for classification as plan assets, they are deducted from the obligations.

The amount of the pension assets is exposed to general market risk. The investment strategy and its implementation are therefore continuously monitored by the trusts' governing bodies, on which the companies are also represented. For example, investment policies are stipulated in investment guidelines with the aim of limiting market risk and its impact on plan assets. In addition, asset-liability management studies are conducted if required so as to ensure that investments are in line with the obligations that need to be covered. The pension assets are currently invested primarily in fixed-income or equity funds. The main risks are therefore interest rate and equity price risk. To mitigate market risk, the pension system also provides for cash funds to be set aside in an equalization reserve before any surplus is allocated.

The present value of the obligation is the present value of the guaranteed obligation after deducting the plan assets. If the plan assets fall below the present value of the guaranteed obligation, a provision must be recognized in that amount. The present value of the guaranteed obligation rises as interest rates fall and is therefore exposed to interest rate risk.

In the case of lifelong pension payments, the Volkswagen Group bears the longevity risk. This is accounted for by calculating the annuity factors and the present value of the guaranteed obligation using the latest generational mortality tables – the "Heubeck 2005 G" mortality tables – which already reflect future increases in life expectancy. In addition, the independent actuaries carry out annual risk monitoring as part of the review of the assets administered by the trusts.

To reduce the inflation risk from adjusting the regular pension payments by the rate of inflation, a pension adjustment that is not indexed to inflation was introduced for pension plans where this is permitted by law.

Calculation of the pension provisions was based on the following actuarial assumptions:

%	Germany 2016	Germany 2015	Abroad 2016	Abroad 2015
Discount rate at December 31	1.79	2.70	3.82	4.36
Payroll trend	3.46	3.42	3.32	3.27
Pension trend	1.50	1.70	2.44	2.46
Employee turnover rate	1.13	1.01	3.63	3.80
Annual increase in healthcare costs	–	–	4.88	5.03

These assumptions are averages that were weighted using the present value of the defined benefit obligation.

With regard to life expectancy, consideration is given to the latest mortality tables in each country.

The discount rates are generally defined to reflect the yields on prime-rated corporate bonds with matching maturities and currencies. The iBoxx AA 10+ Corporates index was taken as the basis for the obligations of German Group companies. Similar indices were used for foreign pension obligations.

The payroll trends cover expected wage and salary trends, which also include increases attributable to career development.

The pension trends either reflect the contractually guaranteed pension adjustments or are based on the rules on pension adjustments in force in each country.

The employee turnover rates are based on past experience and future expectations.

The following table shows changes in the net defined benefit liability recognized in the balance sheet:

€ million	2016	2015
Net liability recognized in the balance sheet at January 1	**27,464**	**29,731**
Current service cost	1,066	1,104
Net interest expense	729	688
Actuarial gains (–)/losses (+) arising from changes in demographic assumptions	17	–23
Actuarial gains (–)/losses (+) arising from changes in financial assumptions	5,862	–2,904
Actuarial gains (–)/losses (+) arising from experience adjustments	–283	190
Income/expenses from plan assets not included in interest income	349	–164
Change in amount not recognized as an asset because of the ceiling in IAS 19	–4	–7
Employer contributions to plan assets	680	654
Employee contributions to plan assets	–7	–6
Pension payments from company assets	833	808
Past service cost (including plan curtailments)	–24	9
Gains (–) or losses (+) arising from plan settlements	4	2
Changes in consolidated Group	0	1
Other changes	–42	–15
Foreign exchange differences from foreign plans	25	–34
Net liability recognized in the balance sheet at December 31	**32,967**	**27,464**

The change in the amount not recognized as an asset because of the ceiling in IAS 19 contains an interest component, part of which was recognized in the financial result in profit or loss, and part of which was recognized outside profit or loss directly in equity.

The change in the present value of the defined benefit obligation is attributable to the following factors:

€ million	2016	2015
Present value of obligations at January 1	**37,215**	**38,939**
Current service cost	1,066	1,104
Interest cost	1,075	996
Actuarial gains(–)/losses (+) arising from changes in demographic assumptions	17	–23
Actuarial gains(–)/losses (+) arising from changes in financial assumptions	5,862	–2,904
Actuarial gains(–)/losses (+) arising from experience adjustments	–283	190
Employee contributions to plan assets	31	33
Pension payments from company assets	833	808
Pension payments from plan assets	308	292
Past service cost (including plan curtailments)	–24	9
Gains (–) or losses (+) arising from plan settlements	–64	–4
Changes in consolidated Group	0	2
Other changes	–4	–8
Foreign exchange differences from foreign plans	–62	–19
Present value of obligations at December 31	**43,689**	**37,215**

Changes in the relevant actuarial assumptions would have had the following effects on the defined benefit obligation:

Present value of defined benefit obligation if		DEC. 31, 2016 € million	DEC. 31, 2016 Change in percent	DEC. 31, 2015 € million	DEC. 31, 2015 Change in percent
Discount rate	is 0.5 percentage points higher	39,761	–8.99	34,103	–8.36
	is 0.5 percentage points lower	48,249	10.44	40,787	9.60
Pension trend	is 0.5 percentage points higher	45,985	5.25	39,081	5.01
	is 0.5 percentage points lower	41,601	–4.78	35,444	–4.76
Payroll trend	is 0.5 percentage points higher	44,297	1.39	37,693	1.28
	is 0.5 percentage points lower	43,145	–1.25	36,772	–1.19
Longevity	increases by one year	44,986	2.97	38,242	2.76

The sensitivity analysis shown above considers the change in one assumption at a time, leaving the other assumptions unchanged versus the original calculation, i.e. any correlation effects between the individual assumptions are ignored.

To examine the sensitivity of the defined benefit obligation to a change in assumed longevity, the estimates of mortality were reduced as part of a comparative calculation to the extent that doing so increases life expectancy by approximately one year.

The average duration of the defined benefit obligation weighted by the present value of the defined benefit obligation (Macaulay duration) is 20 years (previous year: 19 years).

The present value of the defined benefit obligation is attributable as follows to the members of the plan:

€ million	2016	2015
Active members with pension entitlements	25,622	21,148
Members with vested entitlements who have left the Company	2,222	1,754
Pensioners	15,846	14,314
	43,689	**37,215**

The maturity profile of payments attributable to the defined benefit obligation is presented in the following table, which classifies the present value of the obligation by the maturity of the underlying payments:

€ million	2016	2015
Payments due within the next fiscal year	1,126	1,098
Payments due between two and five years	4,801	4,420
Payments due in more than five years	37,762	31,697
	43,689	**37,215**

Changes in plan assets are shown in the following table:

€ million	2016	2015
Fair value of plan assets at January 1	**9,769**	**9,224**
Interest income on plan assets determined using the discount rate	346	308
Income/expenses from plan assets not included in interest income	349	–164
Employer contributions to plan assets	680	654
Employee contributions to plan assets	25	27
Pension payments from plan assets	308	292
Gains (+) or losses (–) arising from plan settlements	68	5
Changes in consolidated Group	–	1
Other changes	38	7
Foreign exchange differences from foreign plans	–82	10
Fair value of plan assets at December 31	**10,749**	**9,769**

The investment of the plan assets to cover future pension obligations resulted in income in the amount of €695 million (previous year: €144 million).

Employer contributions to plan assets are expected to amount to €594 million (€599 million) in the next fiscal year.

Plan assets are invested in the following asset classes:

	DEC. 31, 2016			DEC. 31, 2015		
€ million	Quoted prices in active markets	No quoted prices in active markets	Total	Quoted prices in active markets	No quoted prices in active markets	Total
Cash and cash equivalents	269	–	269	289	–	289
Equity instruments	360	–	360	313	–	313
Debt instruments	1,658	0	1,659	1,513	0	1,513
Direct investments in real estate	2	107	109	2	96	98
Derivatives	–15	–	–15	–19	–	–19
Equity funds	1,531	43	1,574	1,424	50	1,475
Bond funds	5,310	108	5,418	4,682	99	4,781
Real estate funds	192	–	192	257	–	257
Other funds	591	2	593	496	2	499
Other instruments	32	559	591	24	540	564

48.1% (previous year: 47.0%) of the plan assets are invested in German assets, 26.7% (previous year: 29.1%) in other European assets and 25.2% (previous year: 24.0%) in assets in other regions.

Plan assets include €19 million (previous year: €15 million) invested in Volkswagen Group assets and €9 million (previous year: €8 million) in Volkswagen Group debt instruments.

The following amounts were recognized in the income statement:

€ million	2016	2015
Current service cost	1,066	1,104
Net interest on the net defined benefit liability	731	690
Past service cost (including plan curtailments)	–24	9
Gains (–) or losses (+) arising from plan settlements	4	2
Net income (–) and expenses (+) recognized in profit or loss	**1,777**	**1,804**

The above amounts are generally included in the personnel costs of the functions in the income statement. Net interest on the net defined benefit liability is reported in finance costs.

30. Noncurrent and current other provisions

€ million	Obligations arising from sales	Employee expenses	Litigation and legal risks	Miscellaneous provisions	Total
Balance at Jan. 1, 2015	**20,539**	**4,091**	**1,306**	**7,049**	**32,986**
Foreign exchange differences	214	–19	–143	32	83
Changes in consolidated Group	0	0	0	1	2
Utilized	7,517	1,429	236	1,901	11,082
Additions/New provisions	19,270	1,668	7,697	2,747	31,382
Unwinding of discount/effect of change in discount rate	5	–22	4	4	–9
Reversals	1,185	142	219	858	2,404
Balance at Dec. 31, 2015	**31,326**	**4,148**	**8,409**	**7,075**	**50,958**
of which current	17,075	1,733	2,073	4,908	25,788
of which noncurrent	14,251	2,415	6,336	2,168	25,170
Balance at Jan. 1, 2016	**31,326**	**4,148**	**8,409**	**7,075**	**50,958**
Foreign exchange differences	174	35	93	100	402
Changes in consolidated Group	23	1	3	124	151
Utilized	9,265	1,344	1,583	2,103	14,295
Additions/New provisions	12,180	1,736	5,605	3,419	22,939
Unwinding of discount/effect of change in discount rate	123	196	–84	3	238
Reversals	1,533	227	726	713	3,199
Balance at Dec. 31, 2016	**33,027**	**4,546**	**11,717**	**7,904**	**57,193**
of which current	19,521	1,900	8,624	5,666	35,711
of which noncurrent	13,506	2,646	3,092	2,238	21,482

The obligations arising from sales contain provisions covering all risks relating to the sale of vehicles, components and genuine parts through to the disposal of end-of-life vehicles. They primarily comprise warranty obligations, calculated on the basis of losses to date and estimated future losses. They also include provisions for discounts, bonuses and similar allowances which are incurred after the balance sheet date, but for which there is a legal or constructive obligation attributable to sales revenue before the balance sheet date.

Provisions for employee expenses are recognized for long-service awards, time credits, partial retirement arrangements, severance payments and similar obligations, among other things.

The change in the provisions for litigation and legal risks is largely the result of provisions recognized to protect against the currently known legal risks related to the diesel issue, including suitable expenses for defense and legal advice, as well as provisions for the antitrust proceedings that the European Commission opened in 2011 against European truck manufacturers including MAN and Scania. These are subject to what are in part considerable estimation risks because the comprehensive and extensive investigations are still at an early stage, the factors involved are so complex, and the discussions with the authorities are still ongoing. In addition, the provisions for litigation and legal risks contain amounts relating to a large number of legal disputes and official proceedings in which Volkswagen Group companies become involved in Germany and internationally in the course of their operating activities. In particular, such legal disputes and other proceedings may occur in relation to suppliers, dealers, customers, employees, or investors. Please refer to the "Litigation" section for a discussion of the legal risks.

Miscellaneous provisions relate to a wide range of identifiable specific risks, price risks and uncertain obligations, which are measured in the amount of the expected settlement value. The increase results from provisions of €0.3 billion recognized for the investments totaling USD 2.0 billion over 10 years in zero emissions vehicle infrastructure as well as corresponding access and awareness initiatives for these technologies to which the Volkswagen Group had committed itself in the settlement agreements.

Miscellaneous provisions additionally include provisions amounting to €490 million (previous year: €459 million) relating to the insurance business.

31. Put options and compensation rights granted to noncontrolling interest shareholders

This balance sheet item consists primarily of the present value of the cash settlement in accordance with section 305 of the Aktiengesetz (AktG – German Stock Corporation Act) offered to MAN shareholders in connection with the control and profit and loss transfer agreement, including the basic interest rate in accordance with section 247 of the Bürgerliches Gesetzbuch (BGB – German Civil Code) assumed until the end of the award proceedings. The Annual General Meeting of MAN SE approved the conclusion of a control and profit and loss transfer agreement between MAN SE and Volkswagen Truck & Bus GmbH, a subsidiary of Volkswagen AG, in June 2013. The agreement sets out that the noncontrolling interest shareholders of MAN SE are entitled to either a cash settlement in accordance with section 305 of the AktG amounting to €80.89 per tendered ordinary or preferred share, or cash compensation in accordance with section 304 of the AktG in the amount of €3.07 per ordinary or preferred share (after corporate taxes, before the shareholder's individual tax liability) for each full fiscal year. In July 2013, award proceedings were instituted to review the appropriateness of the cash settlement set out in the agreement in accordance with section 305 of the AktG and the cash compensation in accordance with section 304 of the AktG. In July 2015, the Munich Regional Court ruled in the first instance that the amount of the cash settlement payable to the noncontrolling interest shareholders of MAN should be increased from €80.89 to €90.29; at the same time, the amount of the cash compensation was confirmed. The ruling is not yet legally effective, and both parties to the proceedings have since appealed. Volkswagen continues to maintain that the results of the valuation are correct. The appropriateness of the valuation was confirmed by the audit firms and by the court-appointed auditor of the agreement. As a precaution, the measurement was adjusted to the higher settlement payable, resulting in an expense of €437 million in 2015, which was recognized in the other financial result.

32. Trade payables

€ million	Dec. 31, 2016	Dec. 31, 2015
Trade payables to		
third parties	22,311	20,051
unconsolidated subsidiaries	182	165
joint ventures	157	82
associates	141	156
other investees and investors	3	7
	22,794	**20,460**

Additional balance sheet disclosures in accordance with IFRS 7 (Financial Instruments)

CARRYING AMOUNT OF FINANCIAL INSTRUMENTS BY IAS 39 MEASUREMENT CATEGORY

€ million	Dec. 31, 2016	Dec. 31, 2015
Financial assets at fair value through profit or loss	990	1,881
Loans and receivables	134,623	128,198
Available-for-sale financial assets	17,707	15,219
Financial liabilities at fair value through profit or loss	2,358	2,399
Financial liabilities measured at amortized cost	188,791	177,074

RECONCILIATION OF BALANCE SHEET ITEMS TO CLASSES OF FINANCIAL INSTRUMENTS

The following table shows the reconciliation of the balance sheet items to the relevant classes of financial instruments, broken down by the carrying amount and fair value of the financial instruments.

The fair value of financial instruments measured at amortized cost, such as receivables and liabilities, is calculated by discounting using a market rate of interest for a similar risk and matching maturity. For reasons of materiality, the fair value of current balance sheet items is generally deemed to be their carrying amount.

Financial instruments measured at fair value also include shares in partnerships and corporations. There is no active market for these instruments. Since the future cash flows cannot be reliably determined, fair value cannot be determined using measurement models. The shares in these companies are carried at cost.

RECONCILIATION OF BALANCE SHEET ITEMS TO CLASSES OF FINANCIAL INSTRUMENTS AS OF DECEMBER 31, 2015

	MEASURED AT FAIR VALUE	MEASURED AT AMORTIZED COST		DERIVATIVE FINANCIAL INSTRUMENTS WITHIN HEDGE ACCOUNTING	NOT WITHIN SCOPE OF IFRS 7	BALANCE SHEET ITEM AT DEC. 31, 2015
€ million	Carrying amount	Carrying amount	Fair value	Carrying amount	Carrying amount	
Noncurrent assets						
Equity-accounted investments	–	–	–	–	10,904	10,904
Other equity investments	211	–	–	–	763	974
Financial services receivables	–	63,185	64,630	–	–	63,185
Other financial assets	996	4,484	4,492	1,249	–	6,730
Current assets						
Trade receivables	–	11,132	11,132	–	–	11,132
Financial services receivables	–	46,888	46,888	–	–	46,888
Other financial assets	885	7,963	7,963	1,196	–	10,043
Marketable securities	15,007	–	–	–	–	15,007
Cash, cash equivalents and time deposits	–	20,871	20,871	–	–	20,871
Noncurrent liabilities						
Noncurrent financial liabilities	–	73,292	73,844	–	–	73,292
Other noncurrent financial liabilities	1,325	1,996	1,998	2,580	–	5,901
Current liabilities						
Put options and compensation rights granted to noncontrolling interest shareholders	–	3,933	3,783	–	–	3,933
Current financial liabilities	–	72,313	72,313	–	–	72,313
Trade payables	–	20,460	20,460	–	–	20,460
Other current financial liabilities	1,074	5,551	5,551	3,725	–	10,350

RECONCILIATION OF BALANCE SHEET ITEMS TO CLASSES OF FINANCIAL INSTRUMENTS AS OF DECEMBER 31, 2016

€ million	MEASURED AT FAIR VALUE	MEASURED AT AMORTIZED COST		DERIVATIVE FINANCIAL INSTRUMENTS WITHIN HEDGE ACCOUNTING	NOT WITHIN SCOPE OF IFRS 7	BALANCE SHEET ITEM AT DEC. 31, 2016
	Carrying amount	Carrying amount	Fair value	Carrying amount	Carrying amount	
Noncurrent assets						
Equity-accounted investments	–	–	–	–	8,616	8,616
Other equity investments	187	–	–	–	809	996
Financial services receivables	–	68,402	70,766	–	–	68,402
Other financial assets	251	4,982	5,008	3,023	–	8,256
Current assets						
Trade receivables	–	12,187	12,187	–	–	12,187
Financial services receivables	–	49,673	49,673	–	–	49,673
Other financial assets	740	9,527	9,527	1,577	–	11,844
Marketable securities	17,520	–	–	–	–	17,520
Cash, cash equivalents and time deposits	–	19,265	19,265	–	–	19,265
Noncurrent liabilities						
Noncurrent financial liabilities	–	66,358	66,932	–	–	66,358
Other noncurrent financial liabilities	885	1,859	1,863	1,745	–	4,488
Current liabilities						
Put options and compensation rights granted to noncontrolling interest shareholders	–	3,849	3,861	–	–	3,849
Current financial liabilities	–	88,461	88,461	–	–	88,461
Trade payables	–	22,794	22,794	–	–	22,794
Other current financial liabilities	1,473	6,010	6,010	1,956	–	9,438

Uniform valuation techniques and inputs are used to measure fair value. The fair value of Level 2 and 3 financial instruments is measured in the individual divisions on the basis of Group-wide specifications. The measurement techniques used are explained in the section on “Accounting policies”. The fair value of put options and compensation rights granted to noncontrolling interest shareholders is calculated using a present value model based on the cash settlement determined by the Munich Regional Court in the award proceedings, including cash compensation, as well as the minimum statutory interest rate and a risk-adjusted discount rate for a matching maturity. For further information, please see section entitled "Put options and compensation rights granted to noncontrolling interest shareholders”. The fair value of Level 3 receivables was measured by reference to individual expectations of losses; these are based to a significant extent on the Company’s assumptions about counterparty credit quality. Financial services receivables are allocated to Level 3 because their fair value was measured using inputs that are not observable in an active market.

The following table contains an overview of the financial assets and liabilities measured at fair value by level:

FINANCIAL ASSETS AND LIABILITIES MEASURED AT FAIR VALUE BY LEVEL*

€ million	Dec. 31, 2015	Level 1	Level 2	Level 3
Noncurrent assets				
Other equity investments	211	117	–	94
Other financial assets	996	–	976	20
Current assets				
Other financial assets	885	–	879	6
Marketable securities	15,007	15,007	–	–
Noncurrent liabilities				
Other noncurrent financial liabilities	1,325	–	1,142	183
Current liabilities				
Other current financial liabilities	1,074	–	1,006	68

* Prior-year figures adjusted.

€ million	Dec. 31, 2016	Level 1	Level 2	Level 3
Noncurrent assets				
Other equity investments	187	76	–	111
Other financial assets	251	–	216	34
Current assets				
Other financial assets	740	–	734	6
Marketable securities	17,520	17,520	–	–
Noncurrent liabilities				
Other noncurrent financial liabilities	885	–	722	163
Current liabilities				
Other current financial liabilities	1,473	–	1,406	67

FAIR VALUE OF FINANCIAL ASSETS AND LIABILITIES MEASURED AT AMORTIZED COST BY LEVEL

€ million	Dec. 31, 2015	Level 1	Level 2	Level 3
Fair value of financial assets measured at amortized cost				
Financial services receivables	111,518	–	–	111,518
Trade receivables	11,132	–	10,975	157
Other financial assets	12,455	677	6,203	5,576
Cash, cash equivalents and time deposits	20,871	20,467	405	–
Fair value of financial assets measured at amortized cost	**155,977**	**21,144**	**17,583**	**117,251**
Fair value of financial liabilities measured at amortized cost				
Put options and compensation rights granted to noncontrolling interest shareholders	3,783	–	–	3,783
Trade payables	20,460	–	20,460	–
Financial liabilities	146,156	23,675	122,420	61
Other financial liabilities	7,550	269	7,185	95
Fair value of financial liabilities measured at amortized cost	**177,949**	**23,944**	**150,066**	**3,940**

€ million	Dec. 31, 2016	Level 1	Level 2	Level 3
Fair value of financial assets measured at amortized cost				
Financial services receivables	120,438	–	–	120,438
Trade receivables	12,187	–	11,977	210
Other financial assets	14,535	550	6,695	7,289
Cash, cash equivalents and time deposits	19,265	18,838	426	–
Fair value of financial assets measured at amortized cost	**166,915**	**19,389**	**19,099**	**128,427**
Fair value of financial liabilities measured at amortized cost				
Put options and compensation rights granted to noncontrolling interest shareholders	3,861	–	–	3,861
Trade payables	22,794	–	22,794	–
Financial liabilities	155,394	39,391	114,198	1,804
Other financial liabilities	7,873	537	7,159	177
Fair value of financial liabilities measured at amortized cost	**189,921**	**39,928**	**144,151**	**5,842**

DERIVATIVE FINANCIAL INSTRUMENTS WITHIN HEDGE ACCOUNTING BY LEVEL

€ million	Dec. 31, 2015	Level 1	Level 2	Level 3
Noncurrent assets				
Other financial assets	1,249	–	1,249	–
Current assets				
Other financial assets	1,196	–	1,196	–
Noncurrent liabilities				
Other noncurrent financial liabilities	2,580	–	2,573	7
Current liabilities				
Other current financial liabilities	3,725	–	3,725	–

€ million	Dec. 31, 2016	Level 1	Level 2	Level 3
Noncurrent assets				
Other financial assets	3,023	–	3,019	4
Current assets				
Other financial assets	1,577	–	1,577	–
Noncurrent liabilities				
Other noncurrent financial liabilities	1,745	–	1,745	0
Current liabilities				
Other current financial liabilities	1,956	–	1,956	–

The allocation of fair values to the three levels in the fair value hierarchy is based on the availability of observable market prices. Level 1 is used to report the fair value of financial instruments for which a price is directly available in an active market. Examples include marketable securities and other equity investments measured at fair value. Fair values in Level 2, for example of derivatives, are measured on the basis of observable market inputs using market-based valuation techniques. In particular, the inputs used include exchange rates, yield curves and commodity prices that are observable in the relevant markets and obtained through pricing services. Level 3 fair values are calculated using valuation techniques that incorporate inputs that are not observable in active markets. In the Volkswagen Group, long-term commodity futures are allocated to Level 3 because the prices available on the market must be extrapolated for measurement purposes. This is done on the basis of observable inputs obtained for the different commodities through pricing services. Options on equity instruments and residual value protection models are also reported in Level 3. Equity instruments are measured primarily using the relevant business plans and entity-specific discount rates. The significant inputs used to measure fair value for the residual value protection models include forecasts and estimates of used vehicle residual values for the appropriate models.

CHANGES IN BALANCE SHEET ITEMS MEASURED AT FAIR VALUE BASED ON LEVEL 3*

€ million	Financial assets measured at fair value	Financial liabilities measured at fair value
Balance at Jan. 1, 2015	**178**	**249**
Foreign exchange differences	7	0
Total comprehensive income	0	157
recognized in profit or loss	–1	144
recognized in other comprehensive income	0	13
Additions (purchases)	–53	–
Sales and settlements	–12	–99
Transfers into Level 2	0	–56
Balance at Dec. 31, 2015	**119**	**251**
Total gains or losses recognized in profit or loss	**–1**	**–144**
Net other operating expense/income	–	–
of which attributable to assets/liabilities held at the reporting date	–	–
Financial result	–1	–144
of which attributable to assets/liabilities held at the reporting date	–1	–98

* Prior-year figures adjusted.

€ million	Financial assets measured at fair value	Financial liabilities measured at fair value
Balance at Jan. 1, 2016	**119**	**251**
Foreign exchange differences	0	0
Total comprehensive income	24	97
recognized in profit or loss	17	100
recognized in other comprehensive income	7	–3
Additions (purchases)	23	–
Sales and settlements	–9	–89
Transfers into Level 2	–6	–30
Balance at Dec. 31, 2016	**152**	**230**
Total gains or losses recognized in profit or loss	**17**	**–100**
Net other operating expense/income	–	–
of which attributable to assets/liabilities held at the reporting date	–	–
Financial result	17	–100
of which attributable to assets/liabilities held at the reporting date	14	–74

The transfers between the levels of the fair value hierarchy are reported at the respective reporting dates. The transfers out of Level 3 into Level 2 comprise commodity futures for which observable quoted prices are now available for measurement purposes due to the decline in their remaining maturities; consequently, no extrapolation is required. There were no transfers between other levels of the fair value hierarchy.

Commodity prices are the key risk variable for the fair value of commodity futures. Sensitivity analyses are used to present the effect of changes in commodity prices on earnings after tax and equity.

If commodity prices for commodity futures classified as Level 3 had been 10% higher (lower) as of December 31, 2016, earnings after tax would have been €6 million (previous year: €6 million) higher (lower) and equity would have been €3 million (previous year: €2 million) higher (lower).

The key risk variable for measuring options on equity instruments held by the Company is the relevant enterprise value. Sensitivity analyses are used to present the effect of changes in risk variables on earnings after tax.

If the assumed enterprise values had been 10% higher, earnings after tax would have been €1 million (previous year: €1 million) higher. If the assumed enterprise values had been 10% lower, earnings after tax would have been €1 million (previous year: €1 million) lower.

Residual value risks result from hedging agreements with dealers under which earnings effects caused by market-related fluctuations in residual values that arise from buy-back obligations under leases are borne in part by the Volkswagen Group.

The key risk variable influencing the fair value of the options relating to residual value risks is used car prices. Sensitivity analyses are used to quantify the effects of changes in used car prices on earnings after tax.

If the prices for the used cars covered by the residual value protection model had been 10% higher as of December 31, 2016, earnings after tax would have been €249 million higher. If the prices for the used cars covered by the residual value protection model had been 10% lower as of December 31, 2016, earnings after tax would have been €249 million lower.

OFFSETTING OF FINANCIAL ASSETS AND LIABILITIES

The following tables contain information about the effects of offsetting in the balance sheet and the potential financial effects of offsetting in the case of instruments that are subject to a legally enforceable master netting arrangement or a similar agreement.

€ million	Gross amounts of recognized financial assets	Gross amounts of recognized financial liabilities set off in the balance sheet	Net amounts of financial assets presented in the balance sheet	AMOUNTS THAT ARE NOT SET OFF IN THE BALANCE SHEET		Net amount at Dec. 31, 2015
				Financial instruments	Collateral received	
Derivatives	4,326	–	4,326	–2,201	–123	2,002
Financial services receivables	110,396	–323	110,073	–	–16	110,057
Trade receivables	11,243	–111	11,132	0	–231	10,901
Marketable securities	15,007	–	15,007	–	–	15,007
Cash, cash equivalents and time deposits	20,871	–	20,871	–	–	20,871
Other financial assets	12,670	–11	12,658	–	–	12,658

€ million	Gross amounts of recognized financial assets	Gross amounts of recognized financial liabilities set off in the balance sheet	Net amounts of financial assets presented in the balance sheet	AMOUNTS THAT ARE NOT SET OFF IN THE BALANCE SHEET		Net amount at Dec. 31, 2016
				Financial instruments	Collateral received	
Derivatives	5,591	–	5,591	–3,425	–175	1,990
Financial services receivables	118,470	–395	118,075	–	–65	118,010
Trade receivables	12,188	–2	12,187	0	–7	12,179
Marketable securities	17,520	–	17,520	–	–	17,520
Cash, cash equivalents and time deposits	19,265	–	19,265	–	–	19,265
Other financial assets	14,709	–14	14,695	0	–	14,695

€ million	Gross amounts of recognized financial liabilities	Gross amounts of recognized financial assets set off in the balance sheet	Net amounts of financial liabilities presented in the balance sheet	AMOUNTS THAT ARE NOT SET OFF IN THE BALANCE SHEET		Net amount at Dec. 31, 2015
				Financial instruments	Collateral pledged	
Put options and compensation rights granted to noncontrolling interest shareholders	3,933	–	3,933	–	–	3,933
Derivatives	8,703	–	8,703	–2,178	–12	6,514
Financial liabilities	145,604	–	145,604	–	–3,587	142,018
Trade payables	20,571	–111	20,460	0	–	20,460
Other financial liabilities	7,882	–335	7,547	–	–	7,547

€ million	Gross amounts of recognized financial liabilities	Gross amounts of recognized financial assets set off in the balance sheet	Net amounts of financial liabilities presented in the balance sheet	AMOUNTS THAT ARE NOT SET OFF IN THE BALANCE SHEET		Net amount at Dec. 31, 2016
				Financial instruments	Collateral pledged	
Put options and compensation rights granted to noncontrolling interest shareholders	3,849	–	3,849	–	–	3,849
Derivatives	6,058	–	6,058	–3,427	–24	2,607
Financial liabilities	154,819	–	154,819	–	–3,041	151,778
Trade payables	22,796	–2	22,794	0	–	22,794
Other financial liabilities	8,278	–409	7,869	–	–	7,869

The “Financial instruments” column shows the amounts that are subject to a master netting arrangement but were not set off because they do not meet the criteria for offsetting in the balance sheet. The “Collateral received” and “Collateral pledged” columns show the amounts of cash collateral and collateral in the form of financial instruments received and pledged for the total assets and liabilities that do not meet the criteria for offsetting in the balance sheet.

CHANGES IN CREDIT RISK VALUATION ALLOWANCES ON FINANCIAL ASSETS

€ million	Specific valuation allowances	Portfolio-based valuation allowances	2016	Specific valuation allowances	Portfolio-based valuation allowances	2015
Balance at Jan. 1	**2,142**	**1,970**	**4,112**	**2,269**	**1,665**	**3,933**
Exchange rate and other changes	90	–12	78	–115	–6	–121
Changes in consolidated Group	–25	0	–25	–19	–4	–23
Additions	663	727	1,390	702	628	1,330
Utilization	429	–	429	356	–	356
Reversals	404	453	857	362	290	652
Reclassification	56	–56	0	23	–23	0
Balance at Dec. 31	**2,092**	**2,175**	**4,268**	**2,142**	**1,970**	**4,112**

The valuation allowances mainly relate to the credit risks associated with receivables from the financial services business.

ASSET-BACKED SECURITIES TRANSACTIONS

Asset-backed securities transactions with financial assets amounting to €24,191 million (previous year: €23,245 million) entered into to refinance the financial services business are included in bonds, commercial paper and notes, and liabilities from loans. The corresponding carrying amount of the receivables from the customer and dealer financing and the finance lease business amounted to €26,184 million (previous year: €26,415 million). Collateral of €43,847 million (previous year: €34,717 million) in total was furnished as part of asset-backed securities transactions. The expected payments were assigned to structured entities and the equitable liens in the financed vehicles were transferred. These asset-backed securities transactions did not result in the receivables from financial services business being derecognized, as the Group retains nonpayment and late payment risks. The difference between the assigned receivables and the related liabilities is the result of different terms and conditions and the share of the securitized paper and notes held by the Volkswagen Group itself, as well as the proportion of vehicles financed within the Group.

Most of the public and private asset-backed securities transactions of the Volkswagen Group can be repaid in advance (clean-up call) if less than 9% or 10%, as appropriate, of the original transaction volume is outstanding. The assigned receivables cannot be assigned again or pledged elsewhere as collateral. The claims of the holders of commercial paper and notes are limited to the assigned receivables and the receipts from those receivables are earmarked for the repayment of the corresponding liability.

As of December 31, 2016, the fair value of the assigned receivables still recognized in the balance sheet was €27,856 million (previous year: €25,161 million). The fair value of the related liabilities was €24,424 million (previous year: €23,000 million) at that reporting date.

The Volkswagen Financial Services AG Group is contractually obliged under certain conditions to transfer funds to the structured entities that are included in its consolidated financial statements. Since the receivables are transferred to the special purpose entity by way of undisclosed assignment, the situation may occur in which the receivable has already been reduced in a legally binding manner at the originator, for example if the obligor effectively offsets it against receivables owed to it by a company belonging to the Volkswagen Group. In this case, collateral must be furnished for the resulting compensation claims against the special purpose entity, for example if the rating of the Group company concerned declines to a contractually agreed reference value.