Notes to the Consolidated Financial Statements

of the Volkswagen Group as of December 31, 2018

Basis of presentation

Volkswagen AG is domiciled in Wolfsburg, Germany, and entered in the commercial register at the Braunschweig Local Court under No. HRB100484. The fiscal year corresponds to the calendar year.

In accordance with Regulation No. 1606/2002 of the European Parliament and of the Council, Volkswagen AG prepared its consolidated financial statements for 2018 in compliance with the International Financial Reporting Standards (IFRSs), as adopted by the European Union. We have complied with all the IFRSs adopted by the EU and required to be applied.

The accounting policies applied in the previous year were retained, with the exception of the changes due to the new or amended standards.

In addition, we have complied with all the provisions of German commercial law that we are also required to apply, as well as with the German Corporate Governance Code. For information on notices and disclosures of changes regarding the ownership of voting rights in Volkswagen AG in accordance with the Wertpapierhandelsgesetz (WpHG – German Securities Trading Act), please refer to the annual financial statements of Volkswagen AG.

The consolidated financial statements were prepared in euros. Unless otherwise stated, all amounts are given in millions of euros (€ million).

All figures shown are rounded, so minor discrepancies may arise from addition of these amounts.

The income statement was prepared using the internationally accepted cost of sales method.

Preparation of the consolidated financial statements in accordance with the above-mentioned standards requires management to make estimates that affect the reported amounts of certain items in the consolidated balance sheet and in the consolidated income statement, as well as the related disclosure of contingent assets and liabilities. The consolidated financial statements present fairly the net assets, financial position and results of operations as well as the cash flows of the Volkswagen Group.

The Board of Management completed preparation of the consolidated financial statements on February 22, 2019. On that date, the period ended in which adjusting events after the reporting period are recognized.

Effects of new and amended IFRSs

Volkswagen AG has applied all accounting pronouncements adopted by the EU and effective for periods beginning in fiscal year 2018.

Amendments to IAS 40 (Investment Property) have been applicable since January 1, 2018; they clarify when a property is transferred to or from investment property and thus the scope of IAS 40.

In addition, amendments to IFRS 1 and IAS 28 are applicable, which the International Accounting Standards Board issued as part of the improvements to International Financial Reporting Standards (Annual Improvement Project 2016). In IFRS 1 (First-time Adoption of IFRSs), short-term exemptions for first-time adopters of the IFRSs have been deleted. In IAS 28 (Investments in Associates and Joint Ventures), guidance on investment entities has been clarified.

In addition, IFRS 2 (Share-based Payment) was amended. These amendments relate to the clarification of how transactions with share-based payment are classified and measured.

Moreover, amendments to IFRS 4 (Insurance Contracts) have come into effect, which reduce the impact of the different initial application dates of IFRS 9 and IFRS 17.

IFRIC 22 (Foreign Currency Transactions and Advance Consideration) also applies; this interpretation clarifies the exchange rates to be used in foreign currency transactions with advance consideration.

The amendments referred to above do not materially affect the Volkswagen Group's net assets, financial position and results of operations.

IFRS 9 – FINANCIAL INSTRUMENTS

IFRS 9 changes the accounting requirements for classifying and measuring financial assets, for impairment of financial assets, and for hedge accounting.

Financial assets are classified and measured on the basis of the entity's business model and the characteristics of the financial asset's cash flows. A financial asset is initially measured either "at amortized cost", "at fair value through other comprehensive income", or "at fair value through profit or loss". The classification and measurement of financial liabilities under IFRS 9 are largely unchanged compared with the accounting requirements of IAS 39.

The basis for measuring impairment losses and recognizing loss allowances switched from an incurred credit loss model to an expected credit loss model. The change in measurement method leads to an increase in the loss allowance. The increase in the loss allowance results firstly from the requirement to recognize a loss allowance even for financial assets not classified as non-performing and whose credit risk has not increased significantly since initial recognition. Secondly, the increase results from the requirement to recognize loss allowances on the basis of the entire expected remaining life of the contractual asset for financial assets for which there has been a significant increase in credit risk since initial recognition.

In the case of hedge accounting, IFRS 9 contains both extended designation options and the need to implement more complex recognition and measurement methods. In addition, IFRS 9 also eliminates the quantitative limits for effectiveness measurement.

Furthermore, IFRS 9 has an impact on the entity's reclassification practice. Depending on market trends, there is an expectation that operating profit or loss will be affected by hedging transactions to a greater extent. Due to the retrospective application of the guidance on designating options, the prior-year figures were adjusted. This resulted in an effect of €–0.2 billion on earnings after tax in fiscal year 2017.

This also results in far more extensive disclosures in the notes.

The tables below show the main effects of the new accounting rules under IFRS 9 on the classification and measurement of financial assets, the impairment of financial assets and hedge accounting.

For the class of derivatives in hedge accounting, IFRS 9 did not result in any reclassifications from or to other classes.

ADJUSTMENTS TO BALANCE SHEET AMOUNTS AS OF JANUARY 1, 2018 AS A RESULT OF IFRS 9

	DEC. 31, 2017		JAN. 1, 2018
€ million	Before adjustments	Adjustments	After adjustments
Assets			
Noncurrent assets			
Financial services receivables	73,249	–173	73,076
Investments, equity-accounted investments and other equity investments, other receivables and financial assets	30,916	52	30,967
Current assets			
Financial services receivables	53,145	–122	53,023
Other receivables and financial assets	32,040	–206	31,834
Marketable securities	15,939	2	15,941
Cash, cash equivalents and time deposits	18,457	–2	18,456
Equity and liabilities			
Equity			
Total Equity	109,077	–391	108,687
Noncurrent liabilities			
Other liabilities	38,368	–67	38,302
Current liabilities			
Other liabilities	51,705	7	51,712

In addition to the changes described above, the new rules on the recognition of loss allowances had an impact on the measurement of lease assets. This resulted in an adjustment of €43 million (of which €35 million recognized in lease assets and €7 million in inventories). This transition effect, net of deferred taxes, was recognized directly in equity.

RECONCILIATION OF THE CLASSES OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES MEASURED AT FAIR VALUE FROM IAS 39 TO IFRS 9 AS OF JANUARY 1, 2018

		TRANSFERS		
	MEASURED AT FAIR VALUE IAS 39	FROM MEASURED AT AMORTIZED COST	TO MEASURED AT AMORTIZED COST	MEASURED AT FAIR VALUE IFRS 9
€ million	Carrying amount Dec. 31, 2017	Fair value Dec. 31, 2017	Fair value Dec. 31, 2017	Carrying amount Jan. 1, 2018
Noncurrent assets				
Equity-accounted investments	–	–	–	–
Other equity investments	243	–	–	243
Financial services receivables	–	533	–	533
Other financial assets	776	–	–	776
Current assets				
Trade receivables	–	44	–	44
Financial services receivables	–	0	–	0
Other financial assets	936	5	–	941
Marketable securities	15,939	–	79	15,861
Cash, cash equivalents and time deposits	–	–	–	–
Noncurrent liabilities				
Noncurrent financial liabilities	–	–	–	–
Other noncurrent financial liabilities	774	–	–	774
Current liabilities				
Put options and compensation rights granted to noncontrolling interest shareholders	–	–	–	–
Current financial liabilities	–	–	–	–
Trade payables	–	–	–	–
Other current financial liabilities	766	–	–	766

RECONCILIATION OF THE CLASSES OF FINANCIAL ASSETS AND FINANCIAL LIABILITIES MEASURED AT AMORTIZED COST FROM IAS 39 TO IFRS 9 AS OF JANUARY 1, 2018

	MEASURED AT AMORTIZED COST IAS 39		TRANSFERS						MEASURED AT AMORTIZED COST IFRS 9	
			FROM MEASURED AT FAIR VALUE				TO MEASURED AT FAIR VALUE			
€ million	Carrying amount Dec. 31, 2017	Fair value Dec. 31, 2017	Fair value Dec. 31, 2017	Carrying amount adjust-ment Jan. 1, 2018	Provision for credit risks ad-justment Jan. 1, 2018	Carrying amount Jan. 1, 2018	Carrying amount Dec. 31, 2017	Fair value Dec. 31, 2017	**Carrying amount Jan. 1, 2018**	**Fair value Jan. 1, 2018**
Noncurrent assets										
Equity-accounted investments	–	–	–	–	–	–	–	–	–	–
Other equity investments	–	–	–	–	–	–	–	–	–	–
Financial services receivables	43,096	44,093	–	–	–	–	533	533	42,563	43,560
Other financial assets	4,364	4,391	–	–	–	–	–	–	4,364	4,391
Current assets										
Trade receivables	13,357	13,357	–	–	–	–	44	44	13,313	13,313
Financial services receivables	37,142	37,142	–	–	–	–	0	0	37,142	37,142
Other financial assets	9,153	9,153	–	–	–	–	5	5	9,148	9,148
Marketable securities	–	–	79	–	0	78	–	–	78	78
Cash, cash equivalents and time deposits	18,457	18,457	–	–	–	–	–	–	18,457	18,457
Noncurrent liabilities										
Noncurrent financial liabilities	81,200	82,108	–	–	–	–	–	–	81,200	82,108
Other noncurrent financial liabilities	1,630	1,633	–	–	–	–	–	–	1,630	1,633
Current liabilities										
Put options and compensation rights granted to noncontrolling interest shareholders	3,795	3,811	–	–	–	–	–	–	3,795	3,811
Current financial liabilities	81,793	81,793	–	–	–	–	–	–	81,793	81,793
Trade payables	23,046	23,046	–	–	–	–	–	–	23,046	23,046
Other current financial liabilities	7,358	7,358	–	–	–	–	–	–	7,358	7,358

The categories of financial instruments have been added as part of the implementation of IFRS 9 (see the section on “Accounting policies”). The principal movement in this context was the reclassification of lease receivables and liabilities in the “measured at amortized cost” category to “not allocated to any measurement category”. Prior-year values under financial services receivables and financial liabilities have been restated. The carrying amount of lease receivables was €49,166 million (previous year €46,156 million) and their fair value (fair value hierarchy level 3) was €49,791 million (previous year €46,959 million). The carrying amount of lease liabilities was €449 million (previous year €479 million) and their fair value (fair value hierarchy level 2) was €466 million (previous year €510 million).

RECONCILIATION OF THE PROVISION FOR CREDIT RISKS IN RESPECT OF FINANCIAL ASSETS FROM IAS 39 TO IFRS 9 AS OF JANUARY 1, 2018

€ million	From financial assets measured at fair value through other comprehensive income IAS 39	From financial assets measured at amortized cost IAS 39	No measurement category under IAS 39	Total
To financial assets measured at fair value through profit or loss IFRS 9				
Dec. 31, 2017	63	–	–	63
Adjustments	–63	–	–	–63
Jan. 1, 2018	–	–	–	–
To financial assets measured at fair value through other comprehensive income IFRS 9 (equity instruments)				
Dec. 31, 2017	333	–	–	333
Adjustments	–333	–	–	–333
Jan. 1, 2018	–	–	–	–
To financial assets measured at fair value through other comprehensive income IFRS 9 (debt instruments)				
Dec. 31, 2017	–	–	–	–
Adjustments	2	–	–	2
Jan. 1, 2018	2	–	–	2
To financial assets measured at amortized cost IFRS 9				
Dec. 31, 2017	–	3,046	–	3,046
Adjustments	–	318	–	318
Jan. 1, 2018	–	3,364	–	3,364
To lease receivables				
Dec. 31, 2017	–	–	982	982
Adjustments	–	–	238	238
Jan. 1, 2018	–	–	1,221	1,221
To assets IFRS 15				
Dec. 31, 2017	–	–	25	25
Adjustments	–	–	3	3
Jan. 1, 2018	–	–	29	29
To credit commitments				
Dec. 31, 2017	–	–	–	–
Adjustments	–	–	11	11
Jan. 1, 2018	–	–	11	11
To financial guarantees				
Dec. 31, 2017	–	–	–	–
Adjustments	–	–	5	5
Jan. 1, 2018	–	–	5	5
Total Jan. 1, 2018	**2**	**3,364**	**1,266**	**4,631**

RECONCILIATION OF THE CARRYING AMOUNTS OF FINANCIAL ASSETS MEASURED AT FAIR VALUE THROUGH PROFIT OR LOSS FROM IAS 39 TO IFRS 9

€ million	Carrying amount IAS 39 Dec. 31, 2017	Reclassifications	Adjustments IFRS 9	Carrying amount IFRS 9 Jan. 1, 2018	Change in retained earnings Jan. 1, 2018
Financial assets measured at fair value through profit or loss IAS 39	**1,712**				
Additions					
Available for sale financial assets IAS 39		13,124	–230	12,894	–230
Financial assets measured at amortized cost IAS 39		580	–9	571	–9
Deductions					
Financial assets measured at amortized cost IFRS 9		–	–	–	–
Financial assets measured at fair value through other comprehensive income IFRS 9		–	–	–	–
Financial assets measured at fair value through profit or loss IFRS 9				**15,177**	

RECONCILIATION OF THE CARRYING AMOUNTS OF FINANCIAL ASSETS MEASURED AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME FROM IAS 39 TO IFRS 9

€ million	Carrying amount IAS 39 Dec. 31, 2017	Reclassifications	Adjustments IFRS 9	Carrying amount IFRS 9 Jan. 1, 2018	Change in retained earnings Jan. 1, 2018
Available for sale financial assets IAS 39	**16,182**				
Additions					
Financial assets measured at amortized cost IAS 39		5	–	5	–
Deductions					
Financial assets measured at amortized cost IFRS 9		79	–	79	–
Financial assets measured at fair value through profit or loss IFRS 9		13,124	–	13,124	–
Financial assets measured at fair value through other comprehensive income IFRS 9				**2,984**	

RECONCILIATION OF THE CARRYING AMOUNTS OF FINANCIAL ASSETS MEASURED AT AMORTIZED COST FROM IAS 39 TO IFRS 9

€ million	Carrying amount IAS 39 Dec. 31, 2017	Reclassifications	Adjustments IFRS 9	Carrying amount IFRS 9 Jan. 1, 2018	Change in retained earnings Jan. 1, 2018
Financial assets measured at amortized cost IAS 39	**125,550**				
Additions					
Available for sale financial assets IAS 39		79	0	78	0
Deductions					
Financial assets measured at fair value through other comprehensive income IFRS 9		5	–	5	–
Financial assets measured at fair value through profit or loss IFRS 9		580	–	580	–
Financial assets measured at amortized cost IFRS 9				**125,044**	

IFRS 15 – REVENUE FROM CONTRACTS WITH CUSTOMERS

IFRS 15 specifies new accounting rules for revenue recognition. The Volkswagen Group applies the modified retrospective transition method. This did not result in material transition effects for the Volkswagen Group as of January 1, 2018, because the existing approach used by the Volkswagen Group is already largely in line with the new guidance.

In the MAN subgroup, sales revenue for certain types of contracts are recognized at a later point in time than under the previous accounting treatment. Other provisions and other liabilities were adjusted accordingly. The recognition of prepayments due but not yet transferred by the customer in the form of cash increased total assets by €0.2 billion in the balance sheet as of January 1, 2018 compared with the previous year.

Starting in fiscal year 2018, certain items previously recognized in distribution expenses (in particular financing cost subsidies granted to third parties) are allocated to sales allowances.

In addition, from 2018 onward, the reversal of provisions for sales allowances is no longer presented under other operating income, but under sales revenue. As a result, an amount of €0.6 billion has been moved between other operating income and sales revenue.

To make the presentation more consistent and easier to compare, the way other income from the reversal of provisions and accrued liabilities is reported was also adjusted in this context; these items were allocated to those functional areas in which they were originally recognized. As a result, cost of sales declined in the reporting period because of income from the reversal of provisions and accrued liabilities of €2.5 billion (previous year: €2.1 billion). In addition, distribution expenses were down by €0.5 billion (previous year: €0.7 billion) and administrative expenses by €0.2 billion (previous year: €0.1 billion). There was a corresponding €3.3 billion (previous year: €3.0 billion) decrease in other operating income.

In addition, it was established in connection with the introduction of IFRS 15 that certain sales programs in certain countries should be allocated to sales allowances rather than distribution expenses. The prior-period distribution expenses were therefore adjusted by €1.1 billion. There was a corresponding decrease in sales revenue.

New and amended IFRSs not applied

In its 2018 consolidated financial statements, Volkswagen AG did not apply the following accounting pronouncements that have already been adopted by the IASB, but were not yet required to be applied for the fiscal year.

Standard/Interpretation		Published by the IASB	Application mandatory[1]	Adopted by the EU	Expected impact
IFRS 3	Business Combinations: Definition of a Business	Oct. 22, 2018	Jan. 1, 2020	No	No material impact
IFRS 9	Financial Instruments: Prepayment Features with Negative Compensation	Oct. 12, 2017	Jan. 1, 2019	Yes	None
IFRS 10 and IAS 28	Consolidated Financial Statements and Investments in Associates and Joint Ventures: Sale or Contribution of Assets between an Investor and its Associate or Joint Venture	Sep. 11, 2014	deferred[2]	–	None
IFRS 16	Leases	Jan. 13, 2016	Jan. 1, 2019	Yes	Described in detail below this table
IFRS 17	Insurance Contracts	May 18, 2017	Jan. 1, 2021	No	No material impact
IAS 1 and IAS 8	Presentation of Financial Statements and Accounting Policies, Changes in Accounting Estimates and Errors: Definition of Material	Oct. 31, 2018	Jan. 1, 2020	No	No material impact
IAS 19	Employee Benefits: Remeasurement on a Plan Amendment, Curtailment or Settlement	Feb. 7, 2018	Jan. 1, 2019	No	No material impact
IAS 28	Investments in Associates and Joint Ventures: Long-term Interests in Associates and Joint Ventures	Oct. 12, 2017	Jan. 1, 2019	Yes	None
	Annual improvements to International Financial Reporting Standards 2017[3]	Dec. 12, 2017	Jan. 1, 2019	No	No material impact
IFRIC 23	Uncertainty over Income Tax Treatments	Jun. 7, 2017	Jan. 1, 2019	Yes	No material impact

1 Effective date from Volkswagen AG's perspective.
2 The IASB decided on December 15, 2015 to defer the effective date indefinitely.
3 Minor amendments to a number of IFRSs (IFRS 3, IFRS 11, IAS 12 and IAS 23).

IFRS 16 – LEASES

IFRS 16 amends the rules for lease accounting and replaces the previous IAS 17 standard and related interpretations.

The main objective of IFRS 16 is to recognize all leases. It establishes that lessees are no longer required to classify their leases as either finance leases or operating leases. They will instead be required to recognize a right-of-use asset and a lease liability for all leases in the balance sheet. The lease liability is measured on the basis of the outstanding lease payments, discounted using the incremental borrowing rate, while the right-of-use asset is always measured at the amount of the lease liability plus any initial direct costs. During the lease term, the right-of-use asset must be depreciated and the lease liability adjusted using the effective interest method and taking the lease payments into account. Exceptions will be made for short-term leases and leases of low-value assets. For these cases, the Volkswagen Group will make use of the practical expedient provided for in IFRS 16, and opt not to recognize a right-of-use asset or a lease liability arising from such lease agreements; instead it will continue to recognize the lease payments as expenses in profit or loss.

Lessor accounting essentially follows the current guidance of IAS 17. In the future, lessors will continue to classify their leases as finance leases or operating leases on the basis of the risks and rewards incidental to ownership of the leased asset.

As of January 1, 2019, the Volkswagen Group will for the first time account for leases in accordance with IFRS 16, using the modified retrospective transition method. This requires the recognition of the lease liability at the present value of the remaining lease payments, discounted using an incremental borrowing rate at the transition date. To simplify, the right-of-use assets are recognized in the amount of the corresponding lease liability, adjusted for any prepaid or accrued lease payments. As a result of the first-time recognition of right-of-use assets and lease liabilities in almost the same amounts, current estimates indicate that the balance sheet total will increase by around 1%. The rise in financial liabilities will have a negative effect on the Volkswagen Group's net liquidity. No significant effect on equity is expected.

Unlike the previous procedure, under which all operating lease expenses were reported under operating profit, the only items allocated to operating profit under IFRS 16 are depreciation charges on right-of-use assets. Interest expense from adding interest on lease liabilities is reported in the financial result. Based on leases in place as of January 1, 2019, current estimates indicate that there will be an improvement in operating profit by an amount in the low three-digit million range.

The change in the way operating lease expenses are presented in the cash flow statement will result in a slight improvement in cash flows from operating activities and a corresponding reduction in cash flows from financing activities.

This standard also results in far more extensive disclosures in the notes.

Key events

On September 18, 2015, the US Environmental Protection Agency (EPA) publicly announced in a "Notice of Violation" that irregularities in relation to nitrogen oxide (NO_x) emissions had been discovered in emissions tests on certain vehicles of Volkswagen Group with type 2.0 l diesel engines in the USA. In this context, Volkswagen AG announced that noticeable discrepancies between the figures achieved in testing and in actual road use had been identified in around eleven million vehicles worldwide with type EA 189 diesel engines. On November 2, 2015, the EPA issued a "Notice of Violation" alleging that irregularities had also been discovered in the software installed in US vehicles with type V6 3.0 l diesel engines.

In the months following publication of a study by the International Council on Clean Transportation in May 2014, Volkswagen AG's Powertrain Development department checked the test set-ups on which the study was based for plausibility, confirming the unusually high NO_x emissions from certain US vehicles with type EA 189 2.0 l diesel engines. The California Air Resources Board (CARB) – a part of the environmental regulatory authority of California – was informed of this result, and, at the same time, an offer was made to recalibrate the engine control unit software of type EA 189 diesel engines in the USA as part of a service measure that was already planned in the USA. This measure was evaluated and adopted by the Ausschuss für Produktsicherheit (APS – Product Safety Committee), which initiates necessary and appropriate measures to ensure the safety and conformity of Volkswagen AG's products that are placed in the market. There are no findings that an unlawful "defeat device" under US law was disclosed to the APS as the cause of the discrepancies or to the persons responsible for preparing the 2014 annual and consolidated financial statements. Instead, at the time the 2014 annual and consolidated financial statements were being prepared, the persons responsible for preparing the 2014 annual and consolidated financial statements remained under the impression that the issue could be solved with comparatively little effort as part of a service measure.

In the course of the summer of 2015, however, it became successively apparent to individual members of Volkswagen AG's Board of Management that the cause of the discrepancies in the USA was a modification of parts of the software of the engine control unit, which was later identified as an unlawful "defeat device" as defined by US law. This culminated in the disclosure of a "defeat device" to EPA and CARB on September 3, 2015. According to the assessment at that time of the responsible persons dealing with the matter, the scope of the costs expected by the Volkswagen Group (recall costs, retrofitting costs and financial penalties) was not fundamentally dissimilar to that of previous cases involving other vehicle manufacturers, and, therefore, appeared to be controllable overall with a view to the business activities of the Volkswagen Group. This assessment by the Volkswagen Group was based, among other things, on the advice of a law firm engaged in the USA for approval issues, according to which similar cases in the past were resolved amicably with the US authorities. The publication of the "Notice of Violation" by the EPA on September 18, 2015, which, especially at that time, came unexpectedly to the Board of Management, then presented the situation in an entirely different light.

Additional special items in connection with the diesel issue amounting to €3.2 billion (previous year: €3.2 billion) were recognized in the reporting period. The main reasons for the expenses are the administrative fine orders totaling €1.8 billion imposed by the Braunschweig public prosecutor and the Munich II public prosecutor's office in connection with the diesel issue, as well as higher legal risks and legal defense costs and an increase in expenses for technical measures.

Apart from the above, there are no conclusive findings or assessments of facts available to the Board of Management of Volkswagen AG that would suggest that a different assessment of the associated risks (e.g. investor lawsuits) should have been made.

Further details can be found in the "Diesel Issue" section of the management report.

In the award proceedings regarding the appropriateness of the cash settlement and the right to compensation for the noncontrolling interest shareholders of MAN SE, the Higher Regional Court in Munich made a final decision at the end of June 2018, ruling that the right to annual compensation per share must be increased. The cash settlement per share, raised in a first instance ruling by the First Regional Court in Munich, was confirmed.

In August 2018, the control and profit and loss transfer agreement with MAN SE was terminated by extraordinary notice as of January 1, 2019.

Cash outflows for compensation payments and the acquisition of shares tendered amounted to €2.1 billion in the period to December 31, 2018. There was a corresponding decline in the amount of "put options and compensation rights granted to noncontrolling interest shareholders" reported in the balance sheet.

Further information can be found in the "Litigation" section.

Basis of consolidation

In addition to Volkswagen AG, the consolidated financial statements comprise all significant German and non-German subsidiaries, including structured entities that are controlled directly or indirectly by Volkswagen AG. This is the case if Volkswagen AG obtains power over the potential subsidiaries directly or indirectly from voting rights or similar rights, is exposed, or has rights to, positive or negative variable returns from its involvement with the subsidiaries, and is able to influence those returns. In the case of the structured entities consolidated in the Volkswagen Group, Volkswagen is able to direct the material relevant activities remaining after the change in the structure even if it is not invested in the structured entity concerned and is thus able to influence the variable returns from its involvement. The structured entities are used primarily to enter into asset-backed securities transactions to refinance the financial services business and to invest surplus liquidity in special securities funds. Consolidation of subsidiaries begins at the first date on which control exists, and ends when such control no longer exists.

Subsidiaries whose business is dormant or insignificant, both individually and in the aggregate, for the fair presentation of the net assets, financial position and results of operations as well as the cash flows of the Volkswagen Group are not consolidated. They were carried in the consolidated financial statements at cost net of any impairment losses and reversals of impairment losses required to be recognized.

Significant companies where Volkswagen AG is able, directly or indirectly, to significantly influence financial and operating policy decisions (associates), or that are directly or indirectly jointly controlled (joint ventures), are accounted for using the equity method. Joint ventures also include companies in which the Volkswagen Group holds the majority of voting rights, but whose articles of association or partnership agreements stipulate that important decisions may only be resolved unanimously. Insignificant associates and joint ventures are carried at cost net of any impairment losses and reversals of impairment losses required to be recognized.

The composition of the Volkswagen Group is shown in the following table:

	2018	2017
Volkswagen AG and consolidated subsidiaries		
Germany	152	156
Abroad	712	717
Subsidiaries carried at cost		
Germany	70	69
Abroad	251	238
Associates, joint ventures and other equity investments[1]		
Germany	64	59
Abroad	79	71
	1,328	**1,310**

1 The prior-year figures were adjusted to reflect the number of joint ventures.

The list of all shareholdings that forms part of the annual financial statements of Volkswagen AG can be downloaded from the electronic companies register at www.unternehmensregister.de and from www.volkswagenag.com/ir.

The following consolidated German subsidiaries with the legal form of a corporation or partnership meet the criteria set out in section 264(3) or section 264b of the Handelsgesetzbuch (HGB – German Commercial Code) due to their inclusion in the consolidated financial statements and have as far as possible exercised the option not to publish annual financial statements:

- Audi Berlin GmbH, Berlin
- Audi Frankfurt GmbH, Frankfurt am Main
- Audi Hamburg GmbH, Hamburg
- Audi Hannover GmbH, Hanover
- Audi Leipzig GmbH, Leipzig
- Audi Stuttgart GmbH, Stuttgart
- Autostadt GmbH, Wolfsburg
- Bugatti Engineering GmbH, Wolfsburg

- Dr. Ing. h.c. F. Porsche AG, Stuttgart
- GETAS Verwaltung GmbH & Co. Objekt Augsburg KG, Pullach i. Isartal
- GETAS Verwaltung GmbH & Co. Objekt Heinrich-von-Buz-Straße KG, Pullach i. Isartal
- HABAMO Verwaltung GmbH & Co. Objekt Sterkrade KG, Pullach i. Isartal
- Haberl Beteiligungs-GmbH, Munich
- Karosseriewerk Porsche GmbH & Co. KG, Stuttgart
- MAHAG GmbH, Munich
- MAN Energy Solutions SE, Augsburg
- MOIA GmbH, Berlin
- Porsche Consulting GmbH, Bietigheim-Bissingen
- Porsche Deutschland GmbH, Bietigheim-Bissingen
- Porsche Dienstleistungs GmbH, Stuttgart
- Porsche Engineering Group GmbH, Weissach
- Porsche Engineering Services GmbH, Bietigheim-Bissingen
- Porsche Erste Beteiligungsgesellschaft mbH, Stuttgart
- Porsche Financial Services GmbH & Co. KG, Bietigheim-Bissingen
- Porsche Financial Services GmbH, Bietigheim-Bissingen
- Porsche Holding Stuttgart GmbH, Stuttgart
- Porsche Leipzig GmbH, Leipzig
- Porsche Lizenz- und Handelsgesellschaft mbH & Co. KG, Ludwigsburg
- Porsche Logistik GmbH, Stuttgart
- Porsche Niederlassung Berlin GmbH, Berlin
- Porsche Niederlassung Berlin-Potsdam GmbH, Kleinmachnow
- Porsche Niederlassung Hamburg GmbH, Hamburg
- Porsche Niederlassung Leipzig GmbH, Leipzig
- Porsche Niederlassung Stuttgart GmbH, Stuttgart
- Porsche Nordamerika Holding GmbH, Ludwigsburg
- Porsche Siebte Vermögensverwaltung GmbH, Wolfsburg
- Porsche Smart Mobility GmbH, Stuttgart
- Porsche Zentrum Hoppegarten GmbH, Stuttgart
- Raffay Versicherungsdienst GmbH, Hamburg
- SEAT Deutschland Niederlassung GmbH, Frankfurt am Main
- SKODA AUTO Deutschland GmbH, Weiterstadt
- TRATON SE, Munich (previously TRATON AG, Munich)
- TB Digital Services GmbH, Munich
- VfL Wolfsburg-Fußball GmbH, Wolfsburg
- VGRD GmbH, Wolfsburg
- Volkswagen AirService GmbH, Braunschweig
- Volkswagen Automobile Berlin GmbH, Berlin
- Volkswagen Automobile Chemnitz GmbH, Chemnitz
- Volkswagen Automobile Frankfurt GmbH, Frankfurt am Main
- Volkswagen Automobile Hamburg GmbH, Hamburg
- Volkswagen Automobile Hannover GmbH, Hanover
- VOLKSWAGEN Automobile Leipzig GmbH, Leipzig
- Volkswagen Automobile Region Hannover GmbH, Hanover
- Volkswagen Automobile Rhein-Neckar GmbH, Mannheim
- Volkswagen Automobile Stuttgart GmbH, Stuttgart
- Volkswagen Beteiligungsverwaltung GmbH, Wolfsburg
- Volkswagen Dritte Leasingobjekt GmbH, Braunschweig
- Volkswagen Erste Leasingobjekt GmbH, Braunschweig
- Volkswagen Fünfte Leasingobjekt GmbH, Braunschweig
- Volkswagen Gebrauchtfahrzeughandels und Service GmbH, Langenhagen
- Volkswagen Group IT Services GmbH, Wolfsburg
- Volkswagen Group Real Estate GmbH & Co. KG, Wolfsburg

- Volkswagen Group Services GmbH, Wolfsburg
- Volkswagen Immobilien GmbH, Wolfsburg
- Volkswagen Klassik GmbH, Wolfsburg
- Volkswagen Konzernlogistik GmbH & Co. OHG, Wolfsburg
- Volkswagen Original Teile Logistik GmbH & Co. KG, Baunatal
- Volkswagen Osnabrück GmbH, Osnabrück
- Volkswagen R GmbH, Wolfsburg
- Volkswagen Sachsen GmbH, Zwickau
- Volkswagen Sechste Leasingobjekt GmbH, Braunschweig
- Volkswagen Siebte Leasingobjekt GmbH, Braunschweig
- Volkswagen Vertriebsbetreuungsgesellschaft mbH, Chemnitz
- Volkswagen Vierte Leasingobjekt GmbH, Braunschweig
- Volkswagen Zubehör GmbH, Dreieich
- Volkswagen Zweite Leasingobjekt GmbH, Braunschweig

CONSOLIDATED SUBSIDIARIES

Part of the PGA Group SAS, Paris, France, was sold by POFIN Financial Services Verwaltungs GmbH, Freilassing, to the Emil Frey Group on June 1, 2017. The sale is in connection with the strategic development of Porsche Holding Salzburg's dealer network and the corresponding focus on dealerships exclusively selling Volkswagen Group brand vehicles.

The transaction encompasses dealerships in Poland, the Netherlands, Belgium and in some cases also in France. This had a positive effect of €0.8 billion on net liquidity and, taking into account the disposal of the assets and liabilities, resulted in an insignificant income amount for the Volkswagen Group, which is reported in other operating income.

Overall, the transaction led to the disposal of assets in the amount of €2.5 billion and liabilities in the amount of €2.1 billion. The assets mainly consist of noncurrent leased assets (€0.6 billion) and inventories (€1.0 billion). The liabilities principally comprise noncurrent and current other liabilities (€0.9 billion) and trade payables (€0.7 billion).

The fiscal year's changes in the consolidated Group are shown in the following table:

Number	Germany	Abroad
Initially consolidated		
Subsidiaries previously carried at cost	4	26
Newly acquired subsidiaries	–	–
Newly formed subsidiaries	1	9
	5	**35**
Deconsolidated		
Mergers	3	18
Liquidations	6	8
Sales/other	–	14
	9	**40**

The initial consolidation or deconsolidation of these subsidiaries, either individually or collectively, did not have a significant effect on the presentation of the net assets, financial position and results of operations. The unconsolidated structured entities are immaterial from a Group perspective. In particular, they do not give rise to any significant risks to the Group.

INVESTMENTS IN ASSOCIATES

From a Group perspective, the associates Sinotruk (Hong Kong) Ltd., Hongkong, China (Sinotruk), Bertrandt AG, Ehningen (Bertrandt), There Holding B.V., Rijswijk, the Netherlands (There Holding), and Navistar International Corporation, Lisle, USA (Navistar), were material at the reporting date.

Sinotruk

Sinotruk is one of the largest truck manufacturers in the Chinese market. There is an agreement in place between Group companies and Sinotruk regarding a long-term strategic partnership, under which the Group participates in the local market. In addition to the partnership with Sinotruk in the volume segment, exports of MAN vehicles to China are also helping to expand access to the small, but fast-growing premium truck market. Sinotruk's principal place of business is in Hongkong, China.

As of December 31, 2018, the quoted market price of the shares in Sinotruk amounted to €908 million (previous year: €648 million).

Bertrandt

Bertrandt is an engineering partner to companies in the automotive and aviation industry. Its portfolio of services ranges from developing individual components through complex modules to end-to-end solutions. Bertrandt's principal place of business is in Ehningen.

As of December 31, 2018, the quoted market price of the shares in Bertrandt amounted to €201 million (previous year: €299 million).

There Holding

The Audi Subgroup, the BMW Group and Daimler AG each held a 33.3% interest in There Holding B.V., Rijswijk, the Netherlands, which was established in 2015. In December 2016, There Holding B.V. signed a contract with Intel Holdings B.V., Schiphol-Rijk, the Netherlands, for the sale of 15% of the shares in HERE International B.V., Rijswijk, the Netherlands. The transaction with Intel Holdings B.V. was completed on January 31, 2017. This resulted in a loss of control within the meaning of IFRS 10 at the There Holding B.V. level. The deconsolidation gave rise to a proportionate effect for the Volkswagen Group of €183 million, which was shown in the share of profits or losses of equity-accounted investments in the previous year. Since a significant influence continues to exist, HERE International B.V. is included in the financial statement of There Holding B.V. as an associated company using the equity method. There was no change in the Volkswagen Group's participating interest in There Holding B.V. as a result of the sale.

In December 2017, agreements for the sale of shares in There Holding B.V. were signed with Robert Bosch Investment Nederland B.V., Boxtel, the Netherlands and Continental Automotive Holding Netherlands B.V., Maastricht, the Netherlands. In this process, Robert Bosch Investment Nederland B.V. and Continental Automotive Holding Netherlands B.V. acquired an interest of 5.9% each in There Holding B.V. The transactions were completed on February 28, 2018. The Audi Subgroup, the BMW Group and Daimler AG sold the equivalent number of shares. As a result, the interest held by the Volkswagen Group declined to 29.4% as of this date. There was no material effect on financial position or financial performance.

A capital reduction was carried out at There Holding B.V. in February 2018. The share attributable to the Volkswagen Group amounted to €96 million. In addition, in June 2018 and November 2018, There Holding B.V. implemented capital increases in which the Volkswagen Group participated. As a result, the shares accounted for using the equity method increased by €62 million and the participating interest was 29.6% as of December 31, 2018.

Navistar

Within the framework of a capital increase, TRATON SE, a wholly owned subsidiary of Volkswagen AG, acquired 16.6% of the shares in Navistar, paying USD 15.76 per share in 2017. The purchase price came to €0.3 billion. Due to Volkswagen's representation on the Board of Directors of Navistar and the agreed cooperation, the investment in Navistar is reported as an equity-accounted investment in the consolidated financial statements. As of December 31, 2018, an interest of 16.8% was held in Navistar, and the quoted market price of the shares in Navistar amounted to €377 million (previous year: €595 million).

SUMMARIZED FINANCIAL INFORMATION ON MATERIAL ASSOCIATES ON A 100 % BASIS

€ million	Sinotruk[1]	Bertrandt[2]	There Holding	Navistar[3]
2018				
Equity interest (%)	25	29	30	17
Noncurrent assets	2,239	586	1,763	1,846
Current assets	6,461	469	2	4,528
Noncurrent liabilities	54	306	–	6,478
Current liabilities	5,250	167	1	3,356
Net assets	3,395	583	1,764	–3,461
Sales revenue	8,047	1,020	–	8,625
Earnings after tax from continuing operations	558	25	–351	310
Earnings after tax from discontinued operations	–	–	–	–
Other comprehensive income	0	0	–7	245
Total comprehensive income	558	25	–358	555
Dividends received[4]	50	7	–	–
2017				
Equity interest (%)	25	29	33	17
Noncurrent assets	2,086	600	1,906	1,648
Current assets	5,449	478	289	3,470
Noncurrent liabilities	55	338	–	5,893
Current liabilities	4,420	157	0	3,041
Net assets	3,060	583	2,195	–3,816
Sales revenue	5,961	992	71	5,507
Earnings after tax from continuing operations	260	21	–151	95
Earnings after tax from discontinued operations	–	–	513	1
Other comprehensive income	13	0	2	341
Total comprehensive income	272	21	364	437
Dividends received	6	7	–	–

1 Balance sheet amounts refer to the June 30 reporting date and income statement amounts refer to the period from July 1 to June 30.
2 Balance sheet amounts refer to the September 30 reporting date and income statement amounts refer to the period from October 1 to September 30.
3 Balance sheet amounts refer to the October 31, 2018 reporting date. The income statement amounts for fiscal year 2018 refer to the period from November 1, 2017 to October 31, 2018, while those for fiscal year 2017 refer to the period from March 1, 2017 to October 31, 2017.
4 Proportionate dividends are shown net of withholding tax.

RECONCILIATION OF THE FINANCIAL INFORMATION TO THE CARRYING AMOUNT OF THE EQUITY-ACCOUNTED INVESTMENTS

€ million	Sinotruk	Bertrandt	There Holding	Navistar[1]
2018				
Net assets at January 1[2]	3,060	583	2,209	–3,816
Profit or loss	558	25	–351	310
Other comprehensive income	0	0	–7	245
Changes in reserves	–3	–	–87	13
Foreign exchange differences	13	–	–	–191
Dividends[3]	–232	–25	–	–22
Net assets at December 31	3,395	583	1,764	–3,461
Proportionate equity	849	168	522	–582
Consolidation/Goodwill/Others	–402	163	–	1,012
Carrying amount of equity-accounted investments	447	331	522	430
2017				
Net assets at January 1	2,956	587	1,832	–4,270
Profit or loss	260	21	362	96
Other comprehensive income	13	0	2	341
Changes in reserves	1	–	–	11
Foreign exchange differences	–135	–	–	7
Dividends	–34	–25	–	–
Net assets at December 31	3,060	583	2,195	–3,816
Proportionate equity	765	168	646	–644
Consolidation/Goodwill/Others	–387	163	–	946
Carrying amount of equity-accounted investments	378	331	646	301

1 Reconciliation presented for Navistar in 2017 as of March 1, 2017, the date of the first time inclusion of Navistar.
2 Value in the opening balance of There Holding adjusted due to IFRS 15.
3 Dividends are shown before withholding tax.

SUMMARIZED FINANCIAL INFORMATION ON INDIVIDUALLY IMMATERIAL ASSOCIATES ON THE BASIS OF THE VOLKSWAGEN GROUP'S PROPORTIONATE INTEREST

€ million	2018	2017
Earnings after tax from continuing operations	–20	–29
Earnings after tax from discontinued operations	–	–
Other comprehensive income	1	0
Total comprehensive income	–20	–29
Carrying amount of equity-accounted investments	332	90

There were no unrecognized losses relating to investments in associates. Furthermore, there were also no contingent liabilities or financial guarantees relating to associates.

INTERESTS IN JOINT VENTURES

From a Group perspective, the joint ventures FAW-Volkswagen Automotive Company Ltd., Changchun, China, SAIC-Volkswagen Automotive Company Ltd., Shanghai, China, and SAIC-Volkswagen Sales Company Ltd., Shanghai, China, were material at the reporting date due to their size.

FAW-Volkswagen Automotive Company

FAW-Volkswagen Automotive Company develops, produces and sells passenger cars. There is an agreement in place between Group companies and the joint venture partner China FAW Corporation Limited regarding a long-term strategic partnership. The principal place of business is in Changchun, China.

SAIC-Volkswagen Automotive Company

SAIC-Volkswagen Automotive Company develops and produces passenger cars. There is an agreement in place between Group companies and the joint venture partner Shanghai Automotive Industry Corporation regarding a long-term strategic partnership. The principal place of business is in Shanghai, China.

SAIC-Volkswagen Sales Company

SAIC-Volkswagen Sales Company sells passenger cars for SAIC-Volkswagen Automotive Company. There is an agreement in place between Group companies and the joint venture partner Shanghai Automotive Industry Corporation regarding a long-term strategic partnership. The principal place of business is in Shanghai, China.

SUMMARIZED FINANCIAL INFORMATION ON THE MATERIAL JOINT VENTURES ON A 100 % BASIS

€ million	FAW-Volkswagen Automotive Company	SAIC-Volkswagen Automotive Company[1]	SAIC-Volkswagen Sales Company
2018			
Equity interest (%)	40	50	30
Noncurrent assets	10,651	8,580	671
Current assets	10,903	6,689	3,680
of which: cash, cash equivalents and time deposits	3,764	4,412	206
Noncurrent liabilities	1,260	1,205	110
of which: financial liabilities[2]	–	–	–
Current liabilities	12,936	8,526	3,692
of which: financial liabilities[2]	–	4	–
Net assets	7,358	5,538	549
Sales revenue	41,607	28,863	33,212
Depreciation and amortization	1,335	1,479	8
Interest income	123	64	5
Interest expenses	–	1	–
Earnings before tax from continuing operations	4,851	4,588	665
Income tax expense	1,186	1,040	167
Earnings after tax from continuing operations	3,665	3,548	498
Earnings after tax from discontinued operations	–	–	–
Other comprehensive income	47	1	–
Total comprehensive income	3,712	3,549	498
Dividends received[3]	1,209	1,626	148
2017			
Equity interest (%)	40	50	30
Noncurrent assets	10,071	8,266	626
Current assets	13,018	9,304	4,383
of which: cash, cash equivalents and time deposits	7,385	6,198	214
Noncurrent liabilities	1,470	0	61
of which: financial liabilities	–	–	–
Current liabilities	14,768	12,157	4,402
of which: financial liabilities	–	6	–
Net assets	6,851	5,414	546
Sales revenue	40,828	28,767	33,398
Depreciation and amortization	1,212	1,279	6
Interest income	72	36	–
Interest expenses	–	35	–
Earnings before tax from continuing operations	4,907	4,555	669
Income tax expense	1,369	1,086	168
Earnings after tax from continuing operations	3,538	3,469	501
Earnings after tax from discontinued operations	–	10	–
Other comprehensive income	–49	–5	–
Total comprehensive income	3,489	3,473	501
Dividends received	1,502	1,702	137

1 SAIC-Volkswagen Sales Company sells passenger cars for SAIC-Volkswagen Automotive Company. Therefore, the sales revenue reported for SAIC-Volkswagen Automotive Company was mostly generated from its business with SAIC-Volkswagen Sales Company.
2 Excluding trade liabilities.
3 Proportionate dividends are shown net of withholding tax.

RECONCILIATION OF THE FINANCIAL INFORMATION TO THE CARRYING AMOUNT OF THE EQUITY-ACCOUNTED INVESTMENTS

€ million	FAW-Volkswagen Automotive Company	SAIC-Volkswagen Automotive Company	SAIC-Volkswagen Sales Company
2018			
Net assets at January 1[1]	6,851	5,405	546
Profit or loss	3,665	3,548	498
Other comprehensive income	47	1	–
Changes in share capital	–	–	–
Changes in reserves	–	–	–
Foreign exchange differences	68	–23	–1
Dividends[2]	–3,273	–3,393	–494
Net assets at December 31	7,358	5,538	549
Proportionate equity	2,943	2,769	165
Consolidation/Goodwill/Others	–593	–851	–
Carrying amount of equity-accounted investments	2,350	1,918	165
2017			
Net assets at January 1	7,466	5,579	520
Profit or loss	3,538	3,479	501
Other comprehensive income	–49	–5	–
Changes in share capital	–	–	–
Changes in reserves	–	–	–
Foreign exchange differences	–350	–236	–18
Dividends	–3,755	–3,403	–458
Net assets at December 31	6,851	5,414	546
Proportionate equity	2,740	2,707	164
Consolidation/Goodwill/Others	–456	–576	–
Carrying amount of equity-accounted investments	2,284	2,131	164

1 Values in the opening balance adjusted due to IFRS 9.
2 Dividends are shown before withholding tax.

SUMMARIZED FINANCIAL INFORMATION ON INDIVIDUALLY IMMATERIAL JOINT VENTURES ON THE BASIS OF THE VOLKSWAGEN GROUP'S PROPORTIONATE INTEREST

€ million	2018	2017
Earnings after tax from continuing operations	319	290
Earnings after tax from discontinued operations	–	10
Other comprehensive income	–2	0
Total comprehensive income	317	299
Carrying amount of equity-accounted investments	1,939	1,881

There were no unrecognized losses relating to interests in joint ventures. Contingent liabilities to joint ventures amounted to €183 million (previous year: €186 million) and financial guarantees to joint ventures amounted to €146 million (previous year: €82 million). Cash funds of €268 million (previous year: €260 million) are deposited as collateral for asset-backed securities transactions and are therefore not available to the Volkswagen Group.

IFRS 5 – NON-CURRENT ASSETS HELD FOR SALE

As of December 31, 2017, assets in a total amount of €115 million were classified as assets “held for sale” and reported in a separate line item of the balance sheet in accordance with IFRS 5. The assets “held for sale” were measured at the lower of carrying amount and fair value, less expected costs to sell. The assets were no longer depreciated or amortized. The amount reported was mainly attributable to the sale of property, plant and equipment (€24 million) and the sale of shares in There Holding B.V. (€86 million). The sales did not have any material impact on the Volkswagen Group’s results of operations or net liquidity.

Consolidation methods

The assets and liabilities of the German and foreign companies included in the consolidated financial statements are recognized in accordance with the uniform accounting policies used within the Volkswagen Group. In the case of companies accounted for using the equity method, the same accounting policies are applied to determine the proportionate equity, based on the most recent audited annual financial statements of each company.

In the case of subsidiaries consolidated for the first time, assets and liabilities are measured at their fair value at the date of acquisition. Their carrying amounts are adjusted in subsequent years. Goodwill arises when the purchase price of the investment exceeds the fair value of identifiable net assets. Goodwill is tested for impairment once a year to determine whether its carrying amount is recoverable. If the carrying amount of goodwill is higher than the recoverable amount, an impairment loss must be recognized. If this is not the case, there is no change in the carrying amount of goodwill compared with the previous year. If the purchase price of the investment is less than the identifiable net assets, the difference is recognized in the income statement in the year of acquisition. Goodwill is accounted for at the subsidiaries in the functional currency of those subsidiaries. Any difference that arises from the acquisition of additional shares of an already consolidated subsidiary is taken directly to equity. Unless otherwise stated, the proportionate equity directly attributable to noncontrolling interests is determined at the acquisition date as the share of the fair value of the assets (excluding goodwill) and liabilities attributable to them. Contingent consideration is measured at fair value at the acquisition date. Subsequent changes in the fair value of contingent consideration do not generally result in the adjustment of the acquisition-date measurement. Acquisition-related costs that are not equity transaction costs are not added to the purchase price, but instead recognized as expenses in the period in which they are incurred.

The consolidation process involves adjusting the items in the separate financial statements of the parent and its subsidiaries and presenting them as if they were those of a single economic entity. Intragroup assets, liabilities, equity, income, expenses and cash flows are eliminated in full. Intercompany profits or losses are eliminated in Group inventories and noncurrent assets. Deferred taxes are recognized for consolidation adjustments, and deferred tax assets and liabilities are offset where taxes are levied by the same tax authority and have the same maturity.

Currency translation

Transactions in foreign currencies are translated in the single-entity financial statements of Volkswagen AG and its consolidated subsidiaries at the rates prevailing at the transaction date. Foreign currency monetary items are recorded in the balance sheet using the middle rate at the closing date. Foreign exchange gains and losses are recognized in the income statement. This does not apply to foreign exchange differences from loans receivable that represent part of a net investment in a foreign operation. The financial statements of foreign companies are translated into euros using the functional currency concept, under which asset and liability items are translated at the closing rate. With the exception of income and expenses recognized directly in equity, equity is translated at historical rates. The resulting foreign exchange differences are recognized in other comprehensive income until disposal of the subsidiary concerned, and are presented as a separate item in equity.

Income statement items are translated into euros at weighted average rates.

The rates applied are presented in the following table:

		BALANCE SHEET MIDDLE RATE ON DECEMBER 31		INCOME STATEMENT AVERAGE RATE	
	€1 =	2018	2017	2018	2017
Argentina	ARS	43.15687	22.99203	32.89363	18.72636
Australia	AUD	1.62240	1.53285	1.58021	1.47300
Brazil	BRL	4.44485	3.97065	4.30729	3.60471
Canada	CAD	1.55930	1.50260	1.53032	1.46444
Czech Republic	CZK	25.72450	25.57900	25.64308	26.32920
India	INR	79.90650	76.56700	80.71466	73.50146
Japan	JPY	125.91000	134.87000	130.40158	126.66763
Mexico	MXN	22.52035	23.61420	22.71496	21.33175
People's Republic of China	CNY	7.87725	7.80085	7.80766	7.62688
Poland	PLN	4.29780	4.17490	4.26098	4.25727
Republic of Korea	KRW	1,276.90000	1,278.22000	1,299.41384	1,275.94974
Russia	RUB	79.83765	69.33520	74.08214	65.88875
South Africa	ZAR	16.46690	14.75715	15.62243	15.04543
Sweden	SEK	10.25070	9.83140	10.25830	9.63700
United Kingdom	GBP	0.89690	0.88730	0.88476	0.87626
USA	USD	1.14525	1.19875	1.18156	1.12933

Accounting policies

MEASUREMENT PRINCIPLES

With certain exceptions, such as financial instruments measured at fair value and provisions for pensions and other post-employment benefits, items in the Volkswagen Group are accounted for under the historical cost convention. The methods used to measure the individual items are explained in more detail below.

INTANGIBLE ASSETS

Purchased intangible assets are recognized at cost and amortized over their useful life using the straight-line method. This relates in particular to software, which is normally amortized over three years.

In accordance with IAS 38, research costs are recognized as expenses when incurred.

Development costs for future series products and other internally generated intangible assets are capitalized at cost, provided manufacture of the products is likely to bring the Volkswagen Group an economic benefit. If the criteria for recognition as assets are not met, the expenses are recognized in the income statement in the year in which they are incurred.

Capitalized development costs include all direct and indirect costs that are directly attributable to the development process. The costs are amortized using the straight-line method from the start of production over the expected life cycle of the models or powertrains developed – generally between two and ten years.

Amortization recognized during the year is allocated to the relevant functional areas in the income statement.

Brand names from business combinations usually have an indefinite useful life and are therefore not amortized. An indefinite useful life is usually the result of a brand's further use and maintenance.

Goodwill, intangible assets with indefinite useful lives and intangible assets that are not yet available for use are tested for impairment at least once a year. Assets in use and other intangible assets with finite useful lives are tested for impairment only if there are specific indications that they may be impaired. The Volkswagen Group generally applies the higher of value in use and fair value less costs to sell of the relevant cash-generating unit (brands or products) to determine the recoverable amount of goodwill and indefinite-lived intangible assets. Measurement of value in use is based on management's current planning. This planning is based on expectations regarding future global economic trends and on assumptions derived from those trends about the markets for passenger cars and commercial vehicles, market shares and the profitability of the products. The planning for the Financial Services segment is likewise prepared on the basis of these expectations, and also reflects the relevant market penetration rates and regulatory requirements. The planning for the Power Engineering segment reflects expectations about trends in the various individual markets. The planning includes reasonable assumptions about macroeconomic trends (exchange rate, interest rate and commodity price trends) and historical developments. The planning period generally covers five years. For information on the assumptions applied to the detailed planning period, please refer to the Report on Expected Developments, which is part of the Management Report. For subsequent years, plausible assumptions are made regarding future trends. The planning assumptions are adapted to reflect the current state of knowledge.

Estimation of cash flows is generally based on the expected growth trends for the markets concerned. The estimates for the cash flows following the end of the planning period are generally based on a growth rate of up to 1% p.a. (previous year: up to 1% p.a.) in the Passenger Cars segment, and on a growth rate of up to 1% p.a. (previous year: up to 1% p.a.) in the Power Engineering and Commercial Vehicles segments.

Value in use is determined for the purpose of impairment testing of goodwill, indefinite-lived intangible assets and finite-lived intangible assets – mainly capitalized development costs – using the following pretax weighted average cost of capital (WACC) rates, which are adjusted if necessary for country-specific discount factors:

WACC	2018	2017
Passenger Cars segment	5.5%	5.8%
Commercial Vehicles segment	6.8%	6.8%
Power Engineering segment	7.8%	8.0%

The WACC rates are calculated based on the risk-free rate of interest, a market risk premium and the cost of debt. Additionally, specific peer group information on beta factors and leverage are taken into account. The composition of the peer groups used to determine beta factors is continuously reviewed and adjusted if necessary.

PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment is carried at cost less depreciation and – where necessary – write-downs for impairment. Investment grants are generally deducted from cost. Cost is determined on the basis of the direct and indirect costs that are directly attributable. Special tools are reported under other equipment, operating and office equipment. Property, plant and equipment is depreciated using the straight-line method over its estimated useful life. The useful lives of items of property, plant and equipment are reviewed on a regular basis and adjusted if required.

Depreciation is based mainly on the following useful lives:

	Useful life
Buildings	20 to 50 years
Site improvements	10 to 20 years
Technical equipment and machinery	6 to 12 years
Other equipment, operating and office equipment, including special tools	3 to 15 years

Impairment losses on property, plant and equipment are recognized in accordance with IAS 36 where the recoverable amount of the asset concerned has fallen below the carrying amount. Recoverable amount is the higher of value in use and fair value less costs to sell. Value in use is determined using the principles described for intangible assets. The discount rates for product-specific tools and investments are the same as the discount rates for capitalized development costs given above for each segment. If the reasons for impairments recognized in previous years no longer apply, the impairment losses are reversed up to a maximum of the amount that would have been determined if no impairment loss had been recognized.

In accordance with the principle of substance over form, assets that have been formally transferred to third parties under a sale and leaseback transaction including a repurchase option also continue to be accounted for as separate assets.

Where leased items of property, plant and equipment are used, the criteria for classification as a finance lease as set out in IAS 17 are met if all material risks and rewards incidental to ownership have been transferred to the Group company concerned. In such cases, the assets concerned are recognized at fair value or at the present value of the minimum lease payments (if lower) and depreciated using the straight-line method over the asset's useful life, or over the term of the lease if this is shorter. The payment obligations arising from the future lease payments are discounted and recorded as a liability in the balance sheet.

Where Group companies are the lessees of assets under operating leases, i.e. if not all material risks and rewards are transferred, lease and rental payments are recorded directly as expenses in profit or loss.

LEASE ASSETS

Vehicles leased out under operating leases are recognized at cost and depreciated to their estimated residual value using the straight-line method over the term of the lease. Impairment losses identified as a result of an impairment test in accordance with IAS 36 are recognized and the future depreciation rate is adjusted. The forecast residual values are adjusted to include constantly updated internal and external information on residual values, depending on specific local factors and the experiences gained in the marketing of used cars. This requires management to make assumptions in particular about vehicle supply and demand in the future, as well as about vehicle price trends. Such assumptions are based either on qualified estimates or on data published by external experts. Qualified estimates are based on external data – if available – that reflects additional information that is available internally, such as historical experience and current sales data.

INVESTMENT PROPERTY

Real estate and buildings held in order to obtain rental income (investment property) are carried at amortized cost; the useful lives applied to depreciation generally correspond to those of the property, plant and equipment used by the Company itself. The fair value of investment property must be disclosed in the notes if it is carried at amortized cost. Fair value is generally estimated using an investment method based on internal calculations. This involves determining the income value for a specific building on the basis of gross income, taking into account additional factors such as land value, remaining useful life and a multiplier specific to property.

CAPITALIZATION OF BORROWING COSTS

Borrowing costs of qualifying assets are capitalized as part of the cost of these assets. A qualifying asset is an asset that necessarily takes at least a year to get ready for its intended use or sale.

EQUITY-ACCOUNTED INVESTMENTS

The cost of equity-accounted investments is adjusted to reflect the share of increases or reductions in equity at the associates and joint ventures after the acquisition that is attributable to the Volkswagen Group, as well as any effects from purchase price allocation. Additionally, the investment is tested for impairment if there are indications of impairment and written down to the lower recoverable amount if necessary. The recoverable amount is determined using the principles described for indefinite-lived intangible assets. If the reason for impairment ceases to apply at a later date, the impairment loss is reversed to the carrying amount that would have been determined had no impairment loss been recognized.

FINANCIAL INSTRUMENTS

Financial instruments are contracts that give rise to a financial asset of one company and a financial liability or an equity instrument of another. Regular way purchases or sales of financial instruments are accounted for at the settlement date – that is, at the date on which the asset is delivered.

Financial assets are classified and measured on the basis of the entity's business model and the characteristics of the financial asset's cash flows.

IFRS 9 classifies financial assets into the following categories:
- financial assets at fair value through profit or loss;
- financial assets at fair value through other comprehensive income (debt instruments);
- financial assets at fair value through other comprehensive income (equity instruments); and
- financial assets at amortized cost.

Financial liabilities are classified into the following categories:
- financial liabilities at fair value through profit or loss; and
- financial liabilities measured at amortized cost.

In the Volkswagen Group, the categories presented above are allocated to the "at amortized cost" and "at fair value" classes.

FINANCIAL ASSETS AND LIABILITIES AT AMORTIZED COST

Financial assets measured at amortized cost are held under a business model that is aimed at collecting contractual cash flows ("hold" business model). The cash flows of these assets relate solely to payments of principal and interest on the principal amount outstanding. The amortized cost of a financial asset or liability is the amount:
- at which a financial asset or liability is measured at initial recognition;
- minus any principal repayments;
- taking account of any loss allowances, write-downs for impairment and uncollectibility relating to financial assets; and
- plus or minus the cumulative amortization of any difference between the original amount and the amount repayable at maturity (premium, discount), amortized using the effective interest method over the term of the financial asset or liability.

Financial liabilities measured at amortized cost using the effective interest method relate to liabilities to banks, bonds, commercial paper and notes, loans and other liabilities. Gains or losses resulting from changes in amortized cost, including the effects of changes in exchange rates, are recognized through profit or loss. For reasons of materiality, discounting or unwinding of discounting is not applied to current liabilities (due within one year).

Financial assets and liabilities measured at amortized cost are
- receivables from financing business;
- trade receivables and payables;
- other receivables and financial assets and liabilities;
- financial liabilities; and
- cash, cash equivalents and time deposits.

FINANCIAL ASSETS AND LIABILITIES AT FAIR VALUE

Changes in the carrying amount of financial assets measured at fair value are recognized either through OCI or through profit or loss.

The fair value through OCI (debt instruments) category comprises exclusively debt instruments. Changes in fair value are always recognized directly in equity, net of deferred taxes. Certain changes in the fair value of these debt instruments (impairment losses, foreign exchange gains and losses, interest calculated using the effective interest method) are recognized immediately in profit or loss.

Financial assets measured at fair value through other comprehensive income (debt instruments) are held under a business model aimed at both collecting contractual cash flows and selling financial assets (“hold and sell” business model).

Financial assets that are equity instruments are also measured at fair value. Here Volkswagen exercises the option to recognize changes in fair value are always recognized through other comprehensive income, i.e. gains and losses from the measurement of equity investments are never recycled to the income statement and instead reclassified to revenue reserves on disposal (no reclassification).

Any financial assets not measured at either amortized cost or through other comprehensive income are allocated to the fair value through profit or loss category. Financial assets at fair value through profit or loss are aimed in particular at generating cash flows by selling financial instruments (“sell” business model).

At Volkswagen, this category primarily comprises

- hedging relationships to which hedge accounting is not applied and
- investment fund units.

All financial liabilities at fair value through profit or loss relate to derivatives to which hedge accounting is not applied.

Fair value generally corresponds to the market or quoted market price. If no active market exists, fair value is determined using other observable inputs as far as possible. If no observable inputs are available, fair value is determined using valuation techniques, such as by discounting the future cash flows at the market interest rate, or by using recognized option pricing models, and, as far as possible, verified by confirmations from the banks that handle the transactions.

In the case of current financial receivables and liabilities, amortized cost generally corresponds to the principal or repayment amount.

The fair value option for financial assets and financial liabilities is not used in the Volkswagen Group.

Financial assets and financial liabilities are generally presented at their gross amounts and only offset if the Volkswagen Group currently has a legally enforceable right to set off the amounts and intends to settle on a net basis.

Subsidiaries, associates and joint ventures that are not consolidated for reasons of materiality do not fall within the scope of IFRS 9 and IFRS 7.

Likewise, the accounting policies for financial instruments accounted for pursuant to IAS 39, on which the prior-year figures are based, have not been modified. In this context, please refer to the notes provided in the 2017 annual report.

DERIVATIVES AND HEDGE ACCOUNTING

Volkswagen Group companies use derivatives to hedge balance sheet items and future cash flows (hedged items). Appropriate derivatives such as swaps, forward transactions and options are used as hedging instruments. The criteria for the application of hedge accounting are that the hedging relationship between the hedged item and the hedging instrument is clearly documented and that the hedge is highly effective.

The accounting treatment of changes in the fair value of hedging instruments depends on the nature of the hedging relationship. In the case of hedges against the risk of change in the fair value of balance sheet items (fair value hedges), both the hedging instrument and the hedged risk portion of the hedged item are measured at fair value. Several risk portions of hedged items are grouped into a portfolio if appropriate. In the case of a fair value portfolio hedge, the changes in fair value are accounted for in the same way as for a fair value hedge of an individual underlying. Gains or losses from the measurement of hedging instruments and hedged items are recognized in profit or loss. The Volkswagen Group has opted not to retain IAS 39 hedge accounting for all its hedges. This means that, as of the beginning of fiscal year 2018, the only area where IAS 39 accounting is relevant alongside IFRS 9 is the guidance on portfolio hedges of interest rate risk in the Financial Services Division.

In the case of hedges of future cash flows (cash flow hedges), the hedging instruments are also measured at fair value. The designated effective portion of the hedging instrument is accounted for through OCI I and the non-designated portion through OCI II. They are only recognized in the income statement when the hedged item is recognized in profit or loss. The ineffective portion of cash flow hedges is recognized through profit or loss immediately.

Derivatives used by the Volkswagen Group for financial management purposes to hedge against interest rate, foreign currency, commodity price, equity price, or fund price risks, but that do not meet the strict hedge accounting criteria of IFRS 9, are classified as financial assets or liabilities at fair value through profit or loss (also referred to below as derivatives to which hedge accounting is not applied). This also applies to options on shares. External hedging instruments of intragroup hedged items that are subsequently eliminated in the consolidated financial statements are also assigned to this category as a general rule. Assets and liabilities measured at fair value through profit or loss consist of derivatives or components of derivatives that are not included in hedge accounting. These relate for example to the non-designated currency forwards used to hedge sales revenue, interest rate hedges, commodity futures and currency forwards relating to commodity futures.

RECEIVABLES FROM FINANCE LEASES

Where a Group company is the lessor – generally of vehicles – a receivable in the amount of the net investment in the lease is recognized in the case of finance leases, in other words where substantially all the risks and rewards are transferred to the lessee.

IMPAIRMENT LOSSES ON FINANCIAL INSTRUMENTS

Financial assets are exposed to default risk, which is taken into account by recognizing loss allowances or, if losses have already been incurred, by recognizing impairment losses. Default risk on loans and receivables in the financial services segment is accounted for by recognizing specific loss allowances and portfolio-based loss allowances.

In particular, a loss allowance is recognized on these financial assets in the amount of the expected loss in accordance with Group-wide standards. The actual specific loss allowances for the losses incurred are then charged to this loss allowance. A potential impairment is assumed not only for a number of situations such as delayed payment over a certain period, the institution of enforcement measures, the threat of insolvency or overindebtedness, application for or the opening of bankruptcy proceedings, or the failure of reorganization measures, but also for receivables that are not past due.

Portfolio-based loss allowances are recognized by grouping together insignificant receivables and significant individual receivables for which there is no indication of impairment into homogeneous portfolios on the basis of comparable credit risk features and allocating them by risk class. Average historical default probabilities are used in combination with forward-looking parameters for the portfolio concerned to calculate the amount of the impairment loss.

Credit risks must be considered for all financial assets measured at amortized cost or fair value through profit or loss (debt instruments), as well as for contract assets in accordance with IFRS 15 and lease receivables within the scope of IAS 17. The rules on impairment also apply to risks from irrevocable credit commitments not recognized in the balance sheet and to the measurement of financial guarantees.

As a matter of principle, a simplified process, which takes historical default rates and forward-looking information into account, and specific loss allowances are used to account for impairment losses on receivables outside the Financial Services segment.

DEFERRED TAXES

Deferred tax assets are generally recognized for tax-deductible temporary differences between the tax base of assets and liabilities and their carrying amounts in the consolidated balance sheet, as well as on tax loss carryforwards and tax credits provided it is probable that they can be used in future periods. Deferred tax liabilities are generally recognized for all taxable temporary differences between the tax base of assets and liabilities and their carrying amounts in the consolidated balance sheet.

Deferred tax liabilities and assets are recognized in the amount of the expected tax liability or tax benefit, as appropriate, in subsequent fiscal years, based on the expected enacted tax rate at the time of realization. The tax consequences of dividend payments are generally not taken into account until the resolution on appropriation of earnings available for distribution has been adopted.

Deferred tax assets that are unlikely to be realized within a clearly predictable period are reduced by loss allowances.

Deferred tax assets for tax loss carryforwards are usually measured on the basis of future taxable income over a planning period of five fiscal years.

Deferred tax assets and deferred tax liabilities are offset where taxes are levied by the same taxation authority and relate to the same tax period.

INVENTORIES

Raw materials, consumables and supplies, merchandise, work in progress and self-produced finished goods reported in inventories are carried at the lower of cost or net realizable value. Cost is determined on the basis of the direct and indirect costs that are directly attributable. Borrowing costs are not capitalized. The measurement of same or similar inventories is generally based on the weighted average cost method.

NONCURRENT ASSETS HELD FOR SALE AND DISCONTINUED OPERATIONS

Under IFRS 5, noncurrent assets or groups of assets and liabilities (disposal groups) are classified as held for sale if their carrying amounts will be recovered principally through a sale transaction rather than through continuing use. Such assets are carried at the lower of their carrying amount and fair value less costs to sell, and are presented separately in current assets and liabilities in the balance sheet.

Discontinued operations are components of an entity that have either been disposed of or are classified as held for sale. The assets and liabilities of operations that are held for sale represent disposal groups that must be measured and reported using the same principles as noncurrent assets held for sale. The income and expenses from discontinued operations are presented in the income statement as profit or loss from discontinued operations below the profit or loss from continuing operations. Corresponding disposal gains or losses are contained in the profit or loss from discontinued operations. The prior-year figures in the income statement are adjusted accordingly.

PENSION PROVISIONS

The actuarial valuation of pension provisions is based on the projected unit credit method stipulated by IAS 19 for defined benefit plans. The valuation is not only based on pension payments and vested entitlements known at the balance sheet date, but also reflects future salary and pension trends, as well as experience-based staff turnover rates. Remeasurements are recognized in retained earnings in other comprehensive income, net of deferred taxes.

PROVISIONS FOR INCOME TAXES

Tax provisions contain obligations resulting from current income taxes. Deferred taxes are presented in separate items of the balance sheet and income statement. Provisions are recognized for potential tax risks on the basis of the best estimate of the liability.

SHARE-BASED PAYMENT

The share-based payment consists of phantom shares and performance shares. The obligations arising from the share-based payment are accounted for as cash-settled plans in accordance with IFRS 2. The cash-settled share-based payments are measured at fair value until maturity. Fair value is determined using a recognized valuation technique. The compensation cost is allocated over the vesting period.

OTHER PROVISIONS

In accordance with IAS 37, provisions are recognized where a present obligation exists to third parties as a result of a past event, where a future outflow of resources is probable and where a reliable estimate of that outflow can be made.

Provisions not resulting in an outflow of resources in the year immediately following are recognized at their settlement value discounted to the balance sheet date. Discounting is based on market interest rates. An average discount rate of 0.20% (previous year: 0.08%) was used in the Eurozone. The settlement value also reflects cost increases expected at the balance sheet date.

Provisions are not offset against claims for reimbursement.

Insurance contracts that form part of the insurance business are recognized in accordance with IFRS 4. Reinsurance acceptances are accounted for without any time delay in the year in which they arise. Provisions are generally recognized based on the cedant’s contractual duties. Estimation techniques based on assumptions about future changes in claims are used to calculate the claims provision. Other technical provisions relate to the provision for cancellations.

The share of the provisions attributable to reinsurers is calculated in accordance with the contractual agreements with the retrocessionaries and reported under other assets.

CONTINGENT LIABILITIES

If the criteria for recognizing a provision are not met, but the outflow of financial resources is not remote, such obligations are disclosed in the notes to the consolidated financial statements (see the “Contingent liabilities” section). Contingent liabilities are only recognized if the obligations are more certain, i.e. the outflow of financial resources has become probable and their amount can be reliably estimated.

LIABILITIES

Noncurrent liabilities are recorded at amortized cost in the balance sheet. Differences between historical cost and the repayment amount are amortized using the effective interest method.

Liabilities to members of partnerships from puttable shares are recognized in the income statement at the present value of the redemption amount at the balance sheet date.

Liabilities under finance leases are carried at the present value of the lease payments.

Current liabilities are recognized at their repayment or settlement value.

REVENUE AND EXPENSE RECOGNITION

Sales revenue, interest and commission income from financial services and other operating income are recognized only when the relevant service has been rendered or the goods have been delivered, i.e. when the customer has obtained control of the good or service. Where new and used vehicles and original parts are sold, the Company's performance invariably occurs upon delivery, because that is the point when control is transferred, and the inventory risk and, for deliveries to a dealer, invariably also the pricing decision pass to the customer. Revenue is reported net of sales allowances (discounts, rebates, or customer bonuses). The Volkswagen Group measures sales allowances and other variable consideration on the basis of experience and by taking account of current circumstances. Vehicles are normally sold on payment terms. A trade receivable is recognized for the period between vehicle delivery and receipt of payment. Any financing component included in the transaction is only recognized if the period between the transfer of the goods and the payment of consideration is longer than one year and the amount to be accrued is significant.

Sales revenue from financing and finance lease agreements is recognized using the effective interest method. If non-interest-bearing or low-interest vehicle financing arrangements are agreed, sales revenue is reduced by the interest benefits granted. Sales revenue from operate leases is recognized over the term of the contract on a straight line basis.

In contracts under which the goods or services are transferred over a period of time, revenue is recognized, depending on the type of goods or services provided, either according to the stage of completion or, to simplify, on a straight-line basis; the latter is only allowed, if revenue recognition on a straight-line basis does not differ materially from recognition according to the stage of completion. As a rule, the stage of completion is determined as the proportion that contract costs incurred by the end of the reporting period bear to the estimated total contract costs (cost-to-cost method). Contract costs incurred invariably represent the best way to measure the stage of completion for the performance obligation. If the outcome of a performance obligation satisfied over time is not sufficiently certain, but the company expects, as a minimum, to recover its costs, revenue is only recognized in the amount of contract costs incurred (zero profit margin method). If the expected costs exceed the expected revenue, the expected losses are recognized immediately in full as expenses by recognizing impairment losses on the associated contract assets recognized, and additionally by recognizing provisions for any amounts in excess of the impairment losses. Since long-term construction contracts invariably give rise to contingent receivables from customers for the period to completion or payment by the customer, contract assets are recognized for the corresponding amounts. A trade receivable is recognized as soon as the Company has transferred the goods or services in full.

If a contract comprises several separately identifiable components (multiple-element arrangements), these components are recognized separately in accordance with the principles outlined above.

If services are sold to the customer at the same time as the vehicle, and the customer pays for them in advance, the Group recognizes a corresponding contract liability until the services have been transferred. Examples of services that customers pay for in advance are servicing, maintenance and certain warranty contracts as well as mobile online services. For extended warranties granted to customers for a particular model, a provision is normally recognized in the same way as for statutory warranties. If the warranty is optional for the customer or includes an additional service component, the sales revenue is deferred and recognized over the term of the warranty.

Income from the sale of assets for which a Group company has a buyback obligation is recognized only when the assets have definitively left the Group. If a fixed repurchase price was agreed when the contract was entered into, the difference between the selling price and the present value of the repurchase price is recognized as income ratably over the term of the contract. Prior to that time, the assets are carried as inventories in the case of short contract terms and as lease assets in the case of long contract terms.

Sales revenue is always determined on the basis of the price stated in the contract. If variable consideration (e.g. volume-based bonus payments) has been agreed in a contract, the large number of contracts involved means that revenue has to be estimated using the expected value method. In exceptional cases, the most probable amount method may also be used. Once the expected sales revenue has been estimated, an additional check is carried out to determine whether there is any uncertainty that necessitates the reversal of the revenue initially recognized so that it can be virtually ruled out that sales revenue subsequently has to be adjusted downward. Provisions for reimbursements arise mainly from dealer bonuses.

In multiple element arrangements, the transaction price is allocated to the different performance obligations of the contract on the basis of relative standalone selling prices. In the Automotive Division, non-vehicle-related services are invariably measured at their standalone selling prices for reasons of materiality.

Cost of sales includes the costs incurred to generate the sales revenue and the cost of goods purchased for resale. This item also includes the costs of additions to warranty provisions. Research and development costs not eligible for capitalization in the period and amortization of development costs are likewise carried under cost of sales. Reflecting the presentation of interest and commission income in sales revenue, the interest and commission expenses attributable to the financial services business are presented in cost of sales.

Dividend income is recognized on the date when the dividend is legally approved.

GOVERNMENT GRANTS

Government grants related to assets are deducted when arriving at the carrying amount of the asset and are recognized in profit or loss over the life of the depreciable asset as a reduced depreciation expense. If the Group becomes entitled to a grant subsequently, the amount of the grant attributable to prior periods is recognized in profit or loss.

Government grants related to income, i.e. that compensate the Group for expenses incurred, are recognized in profit or loss for the period in those items in which the expenses to be compensated by the grants are also recognized. Grants in the form of nonmonetary assets (e.g. the use of land free of charge or the transfer of resources free of charge) are disclosed as a memo item.

ESTIMATES AND ASSUMPTIONS BY MANAGEMENT

Preparation of the consolidated financial statements requires management to make certain estimates and assumptions that affect the reported amounts of assets and liabilities, and income and expenses, as well as the related disclosure of contingent assets and liabilities of the reporting period. The estimates and assumptions relate largely to the following matters:

The impairment testing of nonfinancial assets (especially goodwill, brand names, capitalized development costs and special tools) and equity-accounted investments, or investments accounted at cost, and the measurement of options on shares in companies that are not traded in an active market require assumptions about the future cash flows during the planning period, and possibly beyond it, as well as about the discount rate to be applied. The estimates made in order to separate cash flows mainly relate to future market shares, the trend in the respective markets and the profitability of the Volkswagen Group's products. In addition, the recoverability of the Group's lease assets depends in particular on the residual value of the leased vehicles after expiration of the lease term, because this represents a significant portion of the expected cash flows. More detailed information on impairment tests and the measurement parameters used for those tests can be found in the explanations on the accounting policies for intangible assets.

If there are no observable market inputs, the fair values of assets acquired and liabilities assumed in a business combination are measured using recognized valuation techniques, such as the relief-from-royalty method or the residual method.

Impairment testing of financial assets requires estimates about the extent and probability of occurrence of future events. As far as possible, estimates are derived from experience taking into account current market data as well as rating categories and scoring information. The more detailed balance sheet disclosures in accordance with IFRS 7 (Financial Instruments) contain further details on how to determine loss allowances.

Accounting for provisions is also based on estimates of the extent and probability of occurrence of future events, as well as estimates of the discount rate. As far as possible, these are also based on experience or external opinions. The assumptions applied in the measurement of pension provisions are described in the "Provisions for pensions and other post-employment benefits" section. Remeasurements are recognized in other comprehensive income and do not affect profit or loss reported in the income statement. Any change in the estimates of the amount of other provisions is always recognized in profit or loss. The provisions are regularly adjusted to reflect new information obtained. The use of expected values means that additional amounts must frequently be recognized for provisions, or that unused provisions are reversed. Similarly to expenses for the recognition of provisions, income from the reversal of provisions is allocated to the respective functions. Warranty claims from sales transactions are calculated on the basis of losses to date, estimated future losses and the policy on ex gratia arrangements. Assumptions were made in respect of the provisions recognized in connection with the diesel issues. These depend on the series, model year and country concerned and relate in particular to the effort, material costs and hourly wage rates involved. In addition, assumptions are made about future resale prices of repurchased vehicles. These assumptions are based on qualified estimates, which are based in turn on external data, and also reflect additional information available internally, such as values derived from experience. An overview of other provisions can be found in the “Noncurrent and current other provisions” section. Further information on the legal proceedings and on the legal risks associated with the diesel issue can be found in the “Litigation” section.

Government grants are recognized based on an assessment as to whether there is reasonable assurance that the Group companies will fulfill the attached conditions and the grants will be awarded. This assessment is based on the nature of the legal entitlement and past experience.

Estimates of the useful life of finite-lived assets are based on experience and are reviewed regularly. Where estimates are modified the residual useful life is adjusted and an impairment loss is recognized, if necessary.

Measuring deferred tax assets requires assumptions regarding future taxable income and the timing of the realization of deferred tax assets.

The estimates and assumptions are based on underlying assumptions that reflect the current state of available knowledge. Specifically, the expected future development of business was based on the circumstances known at the date of preparation of these consolidated financial statements and a realistic assessment of the future development of the global and sector-specific environment. Our estimates and assumptions remain subject to a high degree of uncertainty because future business developments are subject to uncertainties that in part cannot be influenced by the Group. This applies in particular to short- and medium-term cash flow forecasts and to the discount rates used.

Developments in this environment that differ from the assumptions and that cannot be influenced by management could result in amounts that differ from the original estimates. If actual developments differ from the expected developments, the underlying assumptions and, if necessary, the carrying amounts of the assets and liabilities affected are adjusted.

Global gross domestic product (GDP) rose by 3.2% (previous year: 3.3%) in 2018. Our forecasts are based on the assumption that global economic growth will slow down slightly in 2019. As a result, from today's perspective, we are not expecting material adjustments in the following fiscal year in the carrying amounts of the assets and liabilities reported in the consolidated balance sheet.

Estimates and assumptions by management were based in particular on assumptions relating to the development of the general economic environment, the automotive markets and the legal environment. These and further assumptions are explained in detail in the Report on Expected Developments, which is part of the Group Management Report.

Segment reporting

Segments are identified on the basis of the Volkswagen Group's internal management and reporting. In line with the Group's multibrand strategy, each of its brands (operating segments) is managed by its own board of management. The Group targets and requirements laid down by the Board of Management of Volkswagen AG must be complied with. Segment reporting comprises four reportable segments: Passenger Cars, Commercial Vehicles, Power Engineering and Financial Services.

The activities of the Passenger Cars segment cover the development of vehicles and engines, the production and sale of passenger cars, and the corresponding genuine parts business. Given the high degree of technological and economic interlinking in the production network of the individual brands, the Passenger Cars reporting segment combines the Volkswagen Group's individual car brands to a single reportable segment. Furthermore, there is collaboration within key areas such as procurement, research and development or treasury.

The Commercial Vehicles segment primarily comprises the development, production and sale of light commercial vehicles, trucks and buses, the corresponding genuine parts business and related services. Just as in the case of the car brands, there is collaboration within the areas procurement, development and sale. The aim is to achieve further forms of interlinking.

The activities of the Power Engineering segment consist of the development and production of large-bore diesel engines, turbo compressors, industrial turbines and chemical reactor systems, as well as the production of gear units, propulsion components and testing systems.

The activities of the Financial Services segment comprise dealer and customer financing, leasing, banking and insurance activities, fleet management and mobility services. In this segment, combinations occur especially while taking into account the comparability of the type of services as well as the regulatory situation.

Purchase price allocation for companies acquired is allocated directly to the corresponding segments.

At Volkswagen, segment profit or loss is measured on the basis of the operating result.

In the segment reporting, the share of the result of joint ventures is contained in the share of the result of equity-accounted investments in the corresponding segments.

The reconciliation contains activities and other operations that by definition do not constitute segments. It also includes the unallocated Group financing activities. Consolidation adjustments between the segments are also contained in the reconciliation.

Investments in intangible assets, property, plant and equipment, and investment property are reported net of investments under finance leases.

As a matter of principle, business relationships between the companies within the segments of the Volkswagen Group are transacted at arm's length prices.

REPORTING SEGMENTS 2017[1]

€ million	Passenger Cars	Commercial Vehicles	Power Engineering	Financial Services	Total segments	Reconciliation	Volkswagen Group
Sales revenue from external customers	168,381	27,632	3,280	30,191	229,486	64	229,550
Intersegment sales revenue	18,892	7,568	3	3,541	30,004	–30,004	–
Total sales revenue	187,273	35,200	3,283	33,733	259,489	–29,939	229,550
Depreciation and amortization	11,363	2,557	371	6,797	21,089	–147	20,941
Impairment losses	704	2	0	574	1,280	0	1,280
Reversal of impairment losses	14	1	–	41	56	–	56
Segment result (operating result)	12,644	1,892	–55	2,673	17,153	–3,335	13,818
Share of the result of equity-accounted investments	3,390	83	1	9	3,482	–	3,482
Interest result and other financial result	–1,964	–220	–2	–180	–2,366	–1,262	–3,628
Equity-accounted investments	6,724	753	18	710	8,205	–	8,205
Investments in intangible assets, property, plant and equipment, and investment property	15,713	1,915	159	421	18,208	104	18,313

1 Prior-year figures adjusted (see disclosures on IFRS 15).

REPORTING SEGMENTS 2018

€ million	Passenger Cars	Commercial Vehicles	Power Engineering	Financial Services	Total segments	Reconciliation	Volkswagen Group
Sales revenue from external customers	171,028	29,388	3,605	31,592	235,613	236	235,849
Intersegment sales revenue	17,059	7,269	3	3,190	27,521	–27,521	–
Total sales revenue	188,088	36,656	3,608	34,782	263,134	–27,285	235,849
Depreciation and amortization	12,143	2,524	378	6,523	21,567	–56	21,511
Impairment losses	629	89	–	469	1,186	110	1,296
Reversal of impairment losses	156	6	2	98	262	–	262
Segment result (operating result)	12,245	1,971	–64	2,793	16,945	–3,025	13,920
Share of the result of equity-accounted investments	3,094	213	3	58	3,369	–	3,369
Interest result and other financial result	214	248	2	–70	393	–2,039	–1,646
Equity-accounted investments	6,731	971	18	712	8,434	–	8,434
Investments in intangible assets, property, plant and equipment, and investment property	15,599	2,491	176	510	18,776	187	18,962

RECONCILIATION

€ million	2018	2017[1]
Segment sales revenue	**263,134**	**259,489**
Unallocated activities	981	948
Group financing	24	25
Consolidation	–28,290	–30,912
Group sales revenue	**235,849**	**229,550**
Segment result (operating result)	**16,945**	**17,153**
Unallocated activities	–22	10
Group financing	–17	–16
Consolidation	–2,987	–3,328
Operating result	**13,920**	**13,818**
Financial result	**1,723**	**–146**
Consolidated result before tax	**15,643**	**13,673**

1 Prior-year figures adjusted (see disclosures on IFRS 9 and IFRS 15).

BY REGION 2017

€ million	Germany	Europe/Other markets[1]	North America	South America	Asia-Pacific	Total
Sales revenue from external customers[2]	44,333	98,420	37,686	9,988	39,123	229,550
Intangible assets, property, plant and equipment, lease assets and investment property	89,905	35,936	26,855	2,850	2,837	158,384

1 Excluding Germany.
2 Prior-year figures adjusted (see disclosures on IFRS 15).

BY REGION 2018

€ million	Germany	Europe/Other markets[1]	North America	South America	Asia-Pacific	Hedges sales revenue	Total
Sales revenue from external customers	43,526	99,563	37,656	10,405	43,166	1,535	235,849
Intangible assets, property, plant and equipment, lease assets and investment property	95,217	36,110	29,332	2,795	2,830	–	166,285

1 Excluding Germany.

Allocation of sales revenue to the regions follows the destination principle.

Since 2018, the allocation of interregional intragroup transactions has been unitary presented according to the economic ownership regarding the segment assets. The prior-year figures have been adjusted accordingly.

Income statement disclosures

1. Sales revenue

STRUCTURE OF GROUP SALES REVENUE 2017[1]

€ million	Passenger Cars	Commercial Vehicles	Power Engineering	Financial Services	Total segments	Reconciliation	Volkswagen Group
Vehicles	138,697	25,535	–	–	164,232	–19,407	144,826
Genuine parts	12,539	3,197	–	–	15,736	–108	15,628
Used vehicles and third-party products	12,049	1,780	–	–	13,829	–474	13,355
Engines, powertrains and parts deliveries	11,760	733	–	–	12,493	–1,175	11,318
Power Engineering	–	–	3,283	–	3,283	–3	3,280
Motorcycles	601	–	–	–	601	–	601
Leasing business	779	1,947	–	25,989	28,714	–4,144	24,570
Interest and similar income	245	4	–	7,035	7,283	–164	7,119
Hedges sales revenue	–	–	–	–	–	–	–
Other sales revenue	10,605	2,005	–	709	13,319	–4,465	8,853
	187,273	**35,200**	**3,283**	**33,733**	**259,489**	**–29,939**	**229,550**

1 Prior-year figures adjusted (see disclosures on IFRS 15).

STRUCTURE OF GROUP SALES REVENUE 2018

€ million	Passenger Cars	Commercial Vehicles	Power Engineering	Financial Services	Total segments	Reconciliation	Volkswagen Group
Vehicles	136,331	26,166	–	–	162,497	–15,671	146,826
Genuine parts	12,705	3,321	–	–	16,026	–107	15,919
Used vehicles and third-party products	11,379	1,825	–	–	13,204	–650	12,554
Engines, powertrains and parts deliveries	12,976	1,192	–	–	14,168	–1,728	12,440
Power Engineering	–	–	3,608	–	3,608	–3	3,605
Motorcycles	582	–	–	–	582	–	582
Leasing business	826	1,714	–	26,667	29,207	–4,200	25,006
Interest and similar income	230	6	–	7,302	7,537	–187	7,351
Hedges sales revenue	1,362	89	–	–	1,451	83	1,535
Other sales revenue	11,697	2,343	–	814	14,854	–4,824	10,031
	188,088	**36,656**	**3,608**	**34,782**	**263,134**	**–27,285**	**235,849**

For segment reporting purposes, the sales revenue of the Group is presented by segment and market.

Other sales revenue comprises revenue from workshop services and license revenue, among other things.

Of the sales revenue recognized in the period under review, an amount of €6,333 million was included in contract liabilities as of January 1, 2018.

€667 million of the sales revenue recognized in the period under review is attributable to performance obligations satisfied in a prior period.

In addition to existing performance obligations of €3,614 million in the Power Engineering segment, most of which are expected to be satisfied or for which sales revenue is expected to be recognized by December 31, 2019, the vast majority of the Volkswagen Group's performance obligations that are unsatisfied as of the reporting date relate to vehicle deliveries. Most of these deliveries had already been made at the time this report was prepared, or will be made in the first quarter of 2019. The calculation of the amounts for the Power Engineering Business Area took account of both contracts with a term of more than one year and service contracts under which the Volkswagen Group realizes sales revenue in exactly the same amount as the customer benefits from the provision of services by the Company. In the case of variable consideration, sales revenue is only recognized to the extent that there is reasonable assurance that this sales revenue will not subsequently have to be reversed or adjusted downward.

2. Cost of sales

Cost of sales includes interest expenses of €2,270 million (previous year: €1,961 million) attributable to the financial services business.

This item also includes impairment losses on intangible assets (primarily development costs), property, plant and equipment (primarily other equipment, operating and office equipment), and lease assets in the amount of €1,165 million (previous year: €1,185 million). The impairment losses totaling €631 million (previous year: €700 million) recognized during the reporting period on intangible assets and items of property, plant and equipment result in particular from lower values in use of various products in the Passenger Cars segment, from market and exchange rate risks, and in particular from expected declines in volumes. The impairment losses on lease assets in the amount of €534 million (previous year: €485 million) are predominantly attributable to the Financial Services segment. They are based on constantly updated internal and external information that is factored into the forecast residual values of the vehicles. Thereof, €24 million (previous year: €37 million) are reported in current lease assets.

To make the presentation more consistent and easier to compare, the way income from the reversal of provisions and accrued liabilities is reported was adjusted during the implementation of IFRS 15; these items have been allocated to those functional areas in which they were originally recognized. Prior-year figures adjusted (see disclosures on IFRS 15).

Government grants related to income amounted to €466 million in the fiscal year (previous year: €424 million) and were generally allocated to the functional areas.

3. Distribution expenses

Distribution expenses amounting to €20.5 billion (previous year: €20.9 billion) include nonstaff overheads and personnel costs, and depreciation and amortization applicable to the distribution function, as well as the costs of shipping, advertising and sales promotions. To make the presentation more consistent and easier to compare, the way income from the reversal of provisions and accrued liabilities is reported was adjusted during the implementation of IFRS 15; these items have been allocated to those functional areas in which they were originally recognized. Prior-year figures have been restated (see disclosures on IFRS 15).

4. Administrative expenses

Administrative expenses of €8.8 billion (previous year: €8.1 billion) mainly include nonstaff overheads and personnel costs, as well as depreciation and amortization charges applicable to the administrative function. To make the presentation more consistent and easier to compare, the way income from the reversal of provisions and accrued liabilities is reported was adjusted during the implementation of IFRS 15; these items have been allocated to those functional areas in which they were originally recognized. Prior-year figures have been restated (see disclosures on IFRS 15).

5. Other operating income

€ million	2018	2017
Income from reversal of loss allowances on receivables and other assets	1,586	1,043
Income from reversal of provisions and accruals[1]	1,144	1,398
Income from foreign currency hedging derivatives within hedge accounting	822	2,259
Income from foreign exchange gains	2,530	2,656
Income from other hedges	1,138	–
Income from sale of promotional material	483	502
Income from cost allocations	1,139	1,386
Income from investment property	14	16
Gains on asset disposals and the reversal of impairment losses	390	212
Miscellaneous other operating income	2,383	2,041
	11,631	**11,514**

1 Prior-year figures adjusted (see disclosures on IFRS 15).

Foreign exchange gains mainly comprise gains from changes in exchange rates between the dates of recognition and payment of receivables and liabilities denominated in foreign currencies, as well as exchange rate gains resulting from measurement at the closing rate. Foreign exchange losses from these items are included in other operating expenses.

Income from other hedges includes primarily foreign exchange gains from the fair value measurement of financial instruments used to hedge exchange rates and commodity prices and that are not designated in a hedging relationship. Foreign exchange losses are included in other operating expenses. In the previous year, these effects were recognized in the financial result. Under IFRS 9, they are included in operating profit.

6. Other operating expenses

€ million	2018	2017
Loss allowances on trade receivables including construction contracts	315	–
Loss allowances on other receivables and other assets	1,833	1,650
Losses from foreign currency hedging derivatives within hedge accounting	856	1,753
Expenses from other hedges	1,592	–
Foreign exchange losses	2,800	2,839
Expenses from cost allocations	650	609
Expenses for termination agreements	36	35
Losses on disposal of noncurrent assets	161	175
Miscellaneous other operating expenses	6,488	5,197
	14,731	**12,259**

The implementation of IFRS 15, requires loss allowances on trade receivables, including receivables from long-term construction contracts, to be presented separately. The prior-year amount is included in the loss allowances on other receivables and other assets item.

In addition, the changes in the currency hedging derivatives are due to the exchange rate changes between the trade price and the price on realization; this applies in particular to the US dollar, the Chinese renminbi and sterling.

Expenses from other hedges include primarily foreign exchange losses from the fair value measurement of financial instruments used to hedge exchange rates and commodity prices and that are not designated in a hedging relationship. In the previous year, these effects were recognized in the financial result. Under IFRS 9, they are included in operating profit.

Miscellaneous other operating expenses consist of litigation expenses of €3.0 billion (previous year: €1.0 billion) in connection with the diesel issue.

7. Share of the result of equity-accounted investments

€ million	2018	2017
Share of profits of equity-accounted investments	3,551	3,519
of which: from joint ventures	(3,320)	(3,327)
of which: from associates	(231)	(191)
Share of losses of equity-accounted investments	182	36
of which: from joint ventures	(23)	(2)
of which: from associates	(159)	(34)
	3,369	**3,482**

8. Interest result

€ million	2018	2017
Interest income	**967**	**951**
Other interest and similar income	950	839
Income from valuation of interest derivatives	17	113
Interest expenses	**–1,547**	**–2,317**
Other interest and similar expenses	–974	–1,305
Expenses from valuation of interest derivatives	–1	–368
Interest expenses included in lease payments	–27	–29
Interest result on other liabilities	77	–13
Net interest on the net defined benefit liability	–623	–602
Interest result	**–580**	**–1,366**

9. Other financial result

€ million	2018	2017[1]
Income from profit and loss transfer agreements	77	35
Cost of loss absorption	–54	–76
Other income from equity investments	101	71
Other expenses from equity investments	–360	–289
Income from marketable securities and loans	–355	–222
Realized income of loan receivables and payables in foreign currency	1,161	734
Realized expenses of loan receivables and payables in foreign currency	–1,130	–1,107
Gains and losses from remeasurement and impairment of financial instruments	–41	–475
Gains and losses from fair value changes of derivatives not included in hedge accounting	–453	–1,050
Gains and losses from fair value changes of derivatives included in hedge accounting	–12	117
Other financial result	**–1,066**	**–2,262**

1 Prior-year figures adjusted (see disclosures on IFRS 9).

The implementation of IFRS 9 resulted in some hedging gains or losses being allocated to sales revenue and some to other operating income (see disclosures on IFRS 9).

10. Income tax income/expense

COMPONENTS OF TAX INCOME AND EXPENSE

€ million	2018	2017[1]
Current tax expense, Germany	1,131	614
Current tax expense, abroad	2,401	2,590
Current income tax expense	**3,533**	**3,205**
of which prior-period income (–)/expense (+)	(79)	(216)
Deferred tax income (–)/expense (+), Germany	429	321
Deferred tax income (–)/expense (+), abroad	–472	–1,315
Deferred tax income (–)/expense (+)	**–43**	**–995**
Income tax income/expense	**3,489**	**2,210**

1 Prior-year figures adjusted (see disclosures on IFRS 9).

The statutory corporation tax rate in Germany for the 2018 assessment period was 15%. Including trade tax and the solidarity surcharge, this resulted in an aggregate tax rate of 29.9% (previous year: 29.9%).

A tax rate of 29.8% (previous year: 29.9%) was used to measure deferred taxes in the German consolidated tax group.

The local income tax rates applied for companies outside Germany vary between 0% and 45%. In the case of split tax rates, the tax rate applicable to undistributed profits is applied.

The realization of tax benefits from tax loss carryforwards from previous years resulted in a reduction in current income taxes in 2018 of €732 million (previous year: €422 million).

Previously unused tax loss carryforwards amounted to €20,501 million (previous year: €14,931 million). Tax loss carryforwards amounting to €13,217 million (previous year: €9,660 million) can be used indefinitely, while €636 million (previous year: €3,834 million) must be used within the next ten years. There are additional tax loss carryforwards amounting to €6,648 million (previous year: €1,437 million) that can be used within a period of 15 or 20 years. Tax loss carryforwards of €7,995 million (previous year: €7,222 million) were estimated not to be usable overall. Of these, €315 million (previous year: €343 million) will expire within five years, €2,165 million (previous year: €2,152 million) within 6 to 20 years and €126 million (previous year: €93 million) after 20 years. Tax loss carryforwards of €5,390 million (previous year: €4,634 million) that are estimated not to be usable will not expire.

The benefit arising from previously unrecognized tax losses or tax credits of a prior period that is used to reduce current tax expense in the current fiscal year amounts to €94 million (previous year: €114 million). Deferred tax expense was reduced by €116 million (previous year: €75 million) because of a benefit arising from previously unrecognized tax losses and tax credits of a prior period. Deferred tax expense resulting from the write-down of a deferred tax asset amounts to €95 million (previous year: €130 million). Deferred tax income resulting from the reversal of a write-down of deferred tax assets amounts to €231 million (previous year: €40 million).

Tax credits granted by various countries amounted to €385 million (previous year: €500 million).

No deferred tax assets were recognized for deductible temporary differences of €1,123 million (previous year: €1,028 million) and for tax credits of €123 million (previous year: €228 million) that would expire in the next 20 years, or for tax credits of €3 million (previous year: €0 million) that will not expire.

In accordance with IAS 12.39, deferred tax liabilities of €213 million (previous year: €266 million) for temporary differences and undistributed profits of Volkswagen AG subsidiaries were not recognized because control exists.

Deferred tax expense resulting from changes in tax rates amounted to €79 million at Group level (previous year: income of €1,044 million).

Deferred taxes in respect of temporary differences and tax loss carryforwards of €8,235 million (previous year: €8,344 million) were recognized without being offset by deferred tax liabilities in the same amount. The deferred tax assets of companies within the German tax group were recognized due to positive results in the past and are included in this analysis. The companies concerned are expecting positive tax income in the future, following losses in the reporting period or the previous year. €4,532 million (previous year: €3,655 million) of the deferred taxes recognized in the balance sheet was credited to equity and relates to other comprehensive income. €2 million (previous year: €2 million) of this figure is attributable to noncontrolling interests.

In the fiscal year under review, there were only immaterial changes arising from items that will not be reclassified to profit or loss and were recognized directly in equity. Changes in deferred taxes classified by balance sheet item are presented in the statement of comprehensive income.

The first-time application of IFRS 9 in the past fiscal year resulted in adjustments and reclassifications totaling €33 million, which were accounted for as a deduction from equity. In fiscal year 2018, tax effects of €6 million resulting from equity transaction costs were recognized in equity. The calling of the first tranche of the hybrid capital issued in September 2013 resulted in a reduction of equity in the amount of €5 million in the reporting period.

DEFERRED TAXES CLASSIFIED BY BALANCE SHEET ITEM

The following recognized deferred tax assets and liabilities were attributable to recognition and measurement differences in the individual balance sheet items and to tax loss carryforwards:

	DEFERRED TAX ASSETS		DEFERRED TAX LIABILITIES	
€ million	Dec. 31, 2018	Dec. 31, 2017	Dec. 31, 2018	Dec. 31, 2017
Intangible assets	370	363	10,402	10,055
Property, plant and equipment, and lease assets	4,677	4,567	6,996	6,017
Noncurrent financial assets	35	35	179	43
Inventories	2,458	2,653	838	784
Receivables and other assets (including Financial Services Division)	2,113	1,879	7,990	8,889
Other current assets	3,653	3,884	5	42
Pension provisions	6,429	6,652	33	24
Liabilities and other provisions	10,173	9,603	3,581	4,109
Loss allowances on deferred tax assets from temporary differences	–151	–327	–	–
Temporary differences, net of loss allowances	29,758	29,307	30,024	29,963
Tax loss carryforwards, net of loss allowances	3,246	2,090	–	–
Tax credits, net of loss allowances	259	273	–	–
Value before consolidation and offset	**33,262**	**31,670**	**30,024**	**29,963**
of which noncurrent	(21,530)	(18,858)	(23,147)	(22,863)
Offset	26,038	24,816	26,038	24,816
Consolidation	2,906	2,956	1,044	489
Amount recognized	**10,131**	**9,810**	**5,030**	**5,636**

In accordance with IAS 12, deferred tax assets and liabilities are offset if, and only if, they relate to income taxes levied by the same taxation authority and relate to the same tax period.

The tax expense reported for 2018 of €3,489 million (previous year: €2,210 million) was €1,188 million lower (previous year: €1,878 million lower) than the expected tax expense of €4,677 million that would have resulted from application of a tax rate for the Group of 29.9% (previous year: 29.9%) to the earnings before tax of the Group.

RECONCILIATION OF EXPECTED TO EFFECTIVE INCOME TAX

€ million	2018	2017[1]
Profit before tax	15,643	13,673
Expected income tax income (–) / expense (+) (tax rate 29.9%; previous year: 29.9%)	**4,677**	**4,088**
Reconciliation:		
Effect of different tax rates outside Germany	–684	–541
Proportion of taxation relating to:		
tax-exempt income	–1,152	–1,237
expenses not deductible for tax purposes	440	407
effects of loss carryforwards and tax credits	255	476
permanent differences	61	5
Tax credits	–69	–50
Prior-period tax expense	–406	–212
Effect of tax rate changes	79	–1,044
Nondeductible withholding tax	502	383
Other taxation changes	–214	–65
Effective income tax expense	**3,489**	**2,210**
Effective tax rate (%)	22.3	16.2

1 Prior-year figures adjusted (see disclosures on IFRS 9).

In the preceding 2017 fiscal year, the effects of changes in the tax rate had been impacted by the tax reform in the USA which brought a reduction in the corporate income tax rate from 35% to 21%, among other things.

11. Earnings per share

Basic earnings per share are calculated by dividing earnings attributable to Volkswagen AG shareholders by the weighted average number of ordinary and preferred shares outstanding during the reporting period. Since the basic and diluted number of shares is identical, basic earnings per share also correspond to diluted earnings per share.

The distribution of dividends is in accordance with Article 27(2) Nos. 2 and 3 of the Articles of Association of Volkswagen AG, whereby, in the case of a full distribution, the dividend paid for each preferred share is €0.06 higher than that paid for each ordinary share.

	ORDINARY		PREFERRED	
Quantity	2018	2017	2018	2017
Weighted average number of shares outstanding – basic	295,089,818	295,089,818	206,205,445	206,205,445
Weighted average number of shares outstanding – diluted	295,089,818	295,089,818	206,205,445	206,205,445

€ million	2018	2017[1]
Earnings after tax	12,153	11,463
Noncontrolling interests	17	10
Earnings attributable to Volkswagen AG hybrid capital investors	309	274
Earnings attributable to Volkswagen AG shareholders	11,827	11,179
Basic earnings attributable to ordinary shares	6,955	6,573
Diluted earnings attributable to ordinary shares	6,955	6,573
Basic earnings attributable to preferred shares	4,872	4,606
Diluted earnings attributable to preferred shares	4,872	4,606

1 Prior-year figures adjusted (see disclosures on IFRS 9).

€	2018	2017[1]
Basic earnings per ordinary share	23.57	22.28
Diluted earnings per ordinary share	23.57	22.28
Basic earnings per preferred share	23.63	22.34
Diluted earnings per preferred share	23.63	22.34

1 Prior-year figures adjusted (see disclosures on IFRS 9).

Additional Income Statement Disclosures in accordance with IAS 23 (Borrowing Costs)

Capitalized borrowing costs amounted to €62 million (previous year: €83 million) and related mainly to capitalized development costs. An average cost of debt of 1.5 % (previous year: 1.5 %) was used as a basis for capitalization in the Volkswagen Group.

Additional Income Statement Disclosures in accordance with IFRS 7 (Financial Instruments)

The tables below show net gains and losses on financial assets and financial liabilities by measurement category, followed by a detailed explanation of key aspects:

NET GAINS OR LOSSES FROM FINANCIAL INSTRUMENTS BY IAS 39 MEASUREMENT CATEGORY IN 2017

€ million	2017[1]
Financial instruments at fair value through profit or loss	–1,080
Loans and receivables	2,105
Available-for-sale financial assets	–206
Financial liabilities measured at amortized cost	1,689
	2,508

1 Prior-year figures adjusted (see disclosures on IFRS 9).

NET GAINS OR LOSSES FROM FINANCIAL INSTRUMENTS BY IFRS 9 MEASUREMENT CATEGORY IN 2018

€ million	2018
Financial instruments at fair value through profit or loss	–763
Financial assets measured at amortized cost	6,241
Financial assets at fair value through other comprehensive income (debt instruments)	17
Financial liabilities measured at amortized cost	–4,963
	531

Net gains and losses in the category at "financial instruments at fair value through profit or loss" are mainly composed of the fair value measurement gains and losses on derivatives, including interest and gains and losses on currency translation.

Net gains and losses from financial assets measured at fair value through other comprehensive income (debt instruments) relate to interest income from fixed-income securities.

Net gains and losses from financial assets and liabilities measured at amortized cost mainly comprise interest income and expenses calculated according to the effective interest method pursuant to IFRS 9, currency translation effects, and the recognition of loss allowances. Interest also includes interest income and expenses from the lending business of the Financial Services Division.

The table below presents total interest income and expenses from financial assets and liabilities measured at amortized cost, separately from financial assets measured at fair value through other comprehensive income.

TOTAL INTEREST INCOME AND EXPENSES ATTRIBUTABLE TO FINANCIAL INSTRUMENTS NOT MEASURED AT FAIR VALUE THROUGH PROFIT OR LOSS IN 2017

€ million	2017
Interest income	4,794
Interest expenses	3,509
	1,285

TOTAL INTEREST INCOME AND EXPENSES ATTRIBUTABLE TO FINANCIAL INSTRUMENTS NOT MEASURED AT FAIR VALUE THROUGH PROFIT OR LOSS IN 2018

€ million	2018
Financial Assets and liabilities measured at amortized cost	
Interest income	5,022
Interest expenses	3,183
Financial Assets (debt instruments) measured at fair value through other comprehensive income	
Interest income	17
Interest expenses	1

IMPAIRMENT LOSSES ON FINANCIAL ASSETS BY CLASS IN 2017

€ million	2017
Measured at fair value	3
Measured at amortized cost	1,628
	1,631

In fiscal year 2018, €2 million (previous year: €3 million) was recognized as an expense and €51 million (previous year: €58 million) as income from fees and commissions for trust activities and from financial assets and liabilities not measured at fair value that are not accounted for using the effective interest method.

Balance sheet disclosures

12. Intangible assets

CHANGES IN INTANGIBLE ASSETS IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2017

€ 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, 2017	**17,024**	**23,559**	**7,285**	**27,366**	**8,637**	**83,870**
Foreign exchange differences	–30	–91	–44	–183	–192	–539
Changes in consolidated Group	–	–18	–	–	–112	–130
Additions	–	–	4,080	1,180	528	5,788
Transfers	–	–	–4,197	4,197	–7	–7
Disposals	–	7	10	3,607	266	3,890
Balance at Dec. 31, 2017	**16,995**	**23,443**	**7,115**	**28,952**	**8,588**	**85,093**
Amortization and impairment						
Balance at Jan. 1, 2017	**84**	**0**	**39**	**15,040**	**6,109**	**21,271**
Foreign exchange differences	–3	0	0	–122	–138	–263
Changes in consolidated Group	–	0	–	–	–84	–84
Additions to cumulative amortization	3	–	–	3,345	831	4,178
Additions to cumulative impairment losses	–	7	57	332	1	397
Transfers	–	–	–	–	2	2
Disposals	–	7	–	3,595	226	3,827
Reversal of impairment losses	–	–	–	–	–	–
Balance at Dec. 31, 2017	**83**	**0**	**95**	**14,999**	**6,496**	**21,674**
Carrying amount at Dec. 31, 2017	**16,911**	**23,442**	**7,020**	**13,953**	**2,093**	**63,419**

CHANGES IN INTANGIBLE ASSETS IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2018

€ 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, 2018	**16,995**	**23,443**	**7,115**	**28,952**	**8,588**	**85,093**
Foreign exchange differences	–43	–131	–20	–125	–103	–421
Changes in consolidated Group	–	6	–	0	12	18
Additions	–	–	4,192	1,042	581	5,815
Transfers	–	–	–4,040	4,040	41	41
Disposals	–	–	32	1,890	127	2,049
Balance at Dec. 31, 2018	**16,952**	**23,318**	**7,215**	**32,020**	**8,992**	**88,496**
Amortization and impairment						
Balance at Jan. 1, 2018	**83**	**0**	**95**	**14,999**	**6,496**	**21,674**
Foreign exchange differences	–2	0	–1	–55	–79	–137
Changes in consolidated Group	–	0	0	–	–1	–1
Additions to cumulative amortization	3	–	–	3,665	669	4,337
Additions to cumulative impairment losses	–	–	3	41	13	57
Transfers	–	–	–15	15	1	1
Disposals	–	–	–	1,897	109	2,005
Reversal of impairment losses	–	–	42	–	0	42
Balance at Dec. 31, 2018	**84**	**1**	**42**	**16,768**	**6,989**	**23,883**
Carrying amount at Dec. 31, 2018	**16,868**	**23,317**	**7,173**	**15,251**	**2,003**	**64,613**

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	2018	2017
Brand names by operating segment		
Porsche	13,823	13,823
Scania Vehicles and Services	949	990
MAN Truck & Bus	1,127	1,127
MAN Diesel & Turbo	415	415
Ducati	404	404
Other	150	153
	16,868	**16,911**
Goodwill by operating segment		
Porsche	18,825	18,825
Scania Vehicles and Services	2,755	2,866
MAN Truck & Bus	587	595
MAN Diesel & Turbo	267	268
Ducati	290	290
ŠKODA	158	159
Porsche Holding Salzburg	156	151
Other	280	289
	23,317	**23,442**

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	2018	2017	%
Total research and development costs	13,640	13,141	3.8
of which: capitalized development costs	5,234	5,260	–0.5
Capitalization ratio in %	38.4	40.0	–
Amortization of capitalized development costs	3,710	3,734	–0.6
Research and development costs recognized in profit or loss	**12,116**	**11,614**	**4.3**

13. Property, plant and equipment

CHANGES IN PROPERTY, PLANT AND EQUIPMENT IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2017

€ 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, 2017	**33,534**	**43,353**	**64,595**	**7,008**	**148,490**
Foreign exchange differences	–440	–824	–1,056	–152	–2,473
Changes in consolidated Group	–303	–71	–117	–11	–501
Additions	630	1,355	5,056	5,474	12,516
Transfers	1,063	2,509	1,829	–5,411	–11
Disposals	149	873	1,399	31	2,452
Balance at Dec. 31, 2017	**34,335**	**45,450**	**68,909**	**6,876**	**155,569**
Depreciation and impairment					
Balance at Jan. 1, 2017	**13,887**	**30,531**	**49,999**	**39**	**94,456**
Foreign exchange differences	–153	–560	–790	–5	–1,508
Changes in consolidated Group	–117	–62	–80	–	–259
Additions to cumulative depreciation	1,058	3,211	5,152	–	9,421
Additions to cumulative impairment losses	3	–9	254	55	303
Transfers	14	–16	–1	0	–3
Disposals	71	807	1,183	7	2,068
Reversal of impairment losses	0	2	0	13	15
Balance at Dec. 31, 2017	**14,621**	**32,286**	**53,352**	**69**	**100,327**
Carrying amount at Dec. 31, 2017	**19,714**	**13,164**	**15,557**	**6,807**	**55,243**
of which assets leased under finance leases Carrying amount at Dec. 31, 2017	286	6	46	–	339

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

€ million	2018	2019 – 2022	from 2023	Total
Finance lease payments	67	263	390	721
Interest component of finance lease payments	16	87	139	242
Carrying amount of liabilites	**51**	**176**	**252**	**479**

CHANGES IN PROPERTY, PLANT AND EQUIPMENT IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2018

€ 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, 2018	**34,335**	**45,450**	**68,909**	**6,876**	**155,569**
Foreign exchange differences	–98	–216	–79	–59	–452
Changes in consolidated Group	168	9	6	6	189
Additions	597	1,103	4,960	6,452	13,112
Transfers	858	1,753	2,048	–4,703	–43
Disposals	117	1,424	1,495	35	3,071
Balance at Dec. 31, 2018	**35,743**	**46,676**	**74,350**	**8,537**	**165,305**
Depreciation and impairment					
Balance at Jan. 1, 2018	**14,621**	**32,286**	**53,352**	**69**	**100,327**
Foreign exchange differences	–39	–130	–59	–5	–232
Changes in consolidated Group	10	7	1	–	18
Additions to cumulative depreciation	1,062	3,222	5,593	–	9,876
Additions to cumulative impairment losses	22	21	273	258	574
Transfers	–5	47	–25	–18	–1
Disposals	83	1,370	1,318	0	2,770
Reversal of impairment losses	36	26	14	41	117
Balance at Dec. 31, 2018	**15,552**	**34,057**	**57,803**	**263**	**107,675**
Carrying amount at Dec. 31, 2018	**20,191**	**12,618**	**16,546**	**8,274**	**57,630**
of which assets leased under finance leases Carrying amount at Dec. 31, 2018	267	5	41	0	314

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	2019	2020 – 2023	from 2024	Total
Finance lease payments	68	231	360	659
Interest component of finance lease payments	18	73	119	210
Carrying amount of liabilites	**51**	**158**	**241**	**449**

For assets leased under operating leases, payments recognized in the income statement amounted to €1,690 million (previous year: €1,449 million). With respect to internally used assets, €1,544 million (previous year: €1,302 million) of this figure is attributable to minimum lease payments and €13 million (previous year: €55 million) to contingent lease payments. The payments of €133 million (previous year: €92 million) under subleases primarily relate to minimum lease payments.

Government grants of €207 million (previous year: €135 million) were deducted from the cost of property, plant and equipment and noncash benefits received amounting to €0 million (previous year: €12 million) were not capitalized as the cost of assets.

In connection with land and buildings, real property liens of €1,062 million (previous year: €916 million) are pledged as collateral for partial retirement obligations, financial liabilities and other liabilities.

14. Lease assets and investment property

CHANGES IN LEASE ASSETS AND INVESTMENT PROPERTY IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2017

€ million	Lease assets	Investment property	Total
Cost			
Balance at Jan. 1, 2017	**51,483**	**780**	**52,262**
Foreign exchange differences	–3,093	–36	–3,129
Changes in consolidated Group	–873	–	–873
Additions	21,319	18	21,336
Transfers	6	12	18
Disposals	16,616	26	16,641
Balance at Dec. 31, 2017	**52,226**	**748**	**52,973**
Depreciation and impairment			
Balance at Jan. 1, 2017	**13,044**	**268**	**13,312**
Foreign exchange differences	–803	–5	–808
Changes in consolidated Group	–228	0	–228
Additions to cumulative depreciation	7,327	15	7,343
Additions to cumulative impairment losses	448	3	451
Transfers	0	1	1
Disposals	6,775	4	6,779
Reversal of impairment losses	41	–	41
Balance at Dec. 31, 2017	**12,972**	**279**	**13,251**
Carrying amount at Dec. 31, 2017	**39,254**	**468**	**39,722**

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

€ million	2018	2019 – 2022	from 2023	Total
Lease payments	3,392	4,675	46	8,112

CHANGES IN LEASE ASSETS AND INVESTMENT PROPERTY IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2018

€ million	Lease assets	Investment property	Total
Cost			
Balance at Jan. 1, 2018	**52,226**	**748**	**52,973**
Foreign exchange differences	609	12	621
Changes in consolidated Group	–138	–	–138
Additions	21,256	38	21,294
Transfers	–106	2	–104
Disposals	16,354	13	16,367
Balance at Dec. 31, 2018	**57,493**	**786**	**58,279**
Depreciation and impairment			
Balance at Jan. 1, 2018[1]	**13,007**	**279**	**13,287**
Foreign exchange differences	60	2	62
Changes in consolidated Group	–57	–	–57
Additions to cumulative depreciation	7,282	16	7,298
Additions to cumulative impairment losses	510	0	511
Transfers	–8	0	–8
Disposals	6,744	8	6,752
Reversal of impairment losses	103	0	103
Balance at Dec. 31, 2018	**13,947**	**290**	**14,237**
Carrying amount at Dec. 31, 2018	**43,545**	**496**	**44,042**

1 Values in the opening balance adjusted (see disclosures on IFRS 9).

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

Investment property includes apartments rented out and leased dealerships with a fair value of €1,106 million (previous year: €993 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: €52 million) were incurred for the maintenance of investment property in use. Expenses of €1 million (previous year: €3 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	2019	2020 – 2023	from 2024	Total
Lease payments	4,108	5,187	17	9,312

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, 2017

€ million	Equity-accounted investments	Other equity investments	Total
Gross carrying amount at Jan. 1, 2017	**8,727**	**1,417**	**10,143**
Foreign exchange differences	–129	–17	–146
Changes in consolidated Group	–13	–90	–104
Additions	348	519	867
Transfers	–	0	0
Assets held for sale	–86	–	–86
Disposals	7	34	40
Changes recognized in profit or loss	3,495	–	3,495
Dividends	–3,640	–	–3,640
Other changes recognized in other comprehensive income	–251	30	–221
Balance at Dec. 31, 2017	**8,443**	**1,825**	**10,268**
Impairment losses Balance at Jan. 1, 2017	**110**	**420**	**531**
Foreign exchange differences	–1	–3	–4
Changes in consolidated Group	–	–15	–15
Additions	129	129	258
Transfers	–	–	–
Disposals	–	24	24
Reversal of impairment losses	–	1	1
Balance at Dec. 31, 2017	**238**	**507**	**745**
Carrying amount at Dec. 31, 2017	**8,205**	**1,318**	**9,523**

CHANGES IN EQUITY-ACCOUNTED INVESTMENTS AND OTHER EQUITY INVESTMENTS IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2018

€ million	Equity-accounted investments	Other equity investments	Total
Gross carrying amount at Jan. 1, 2018[1]	**8,431**	**1,827**	**10,259**
Foreign exchange differences	–9	9	0
Changes in consolidated Group	269	–368	–99
Additions	247	693	939
Transfers	–	0	0
Disposals	84	19	103
Changes recognized in profit or loss	3,371	–	3,371
Dividends[2]	–3,460	–	–3,460
Other changes recognized in other comprehensive income	62	1	62
Balance at Dec. 31, 2018	**8,826**	**2,142**	**10,968**
Impairment losses			
Balance at Jan. 1, 2018	**238**	**507**	**745**
Foreign exchange differences	–1	–1	–2
Changes in consolidated Group	–	–4	–4
Additions	155	172	326
Transfers	–	0	0
Disposals	–	5	5
Reversal of impairment losses	–	1	1
Balance at Dec. 31, 2018	**392**	**668**	**1,060**
Carrying amount at Dec. 31, 2018	**8,434**	**1,474**	**9,908**

1 Values in the opening balance adjusted (see disclosures on IFRS 9 and IFRS 15).
2 Dividends before withholding tax.

Equity-accounted investments include joint ventures in the amount of €6,372 million (previous year: €6,459 million) and associates in the amount of €2,062 million (previous year: €1,746 million).

Of the other changes recognized in other comprehensive income, €7 million (previous year: €–249 million) is attributable to joint ventures and €55 million (previous year: €–2 million) to associates. They are mainly the result of foreign exchange differences in the amount of €9 million (previous year: €–327 million), pension plan remeasurements in the amount of €31 million (previous year: €112 million) and fair value measurement of cash flow hedges in the amount of €28 million (previous year: €–30 million).

16. Noncurrent and current financial services receivables

	CARRYING AMOUNT			FAIR VALUE	CARRYING AMOUNT			FAIR VALUE
€ million	Current	Noncurrent	Dec. 31, 2018	Dec. 31, 2018	Current	Noncurrent	Dec. 31, 2017	Dec. 31, 2017
Receivables from financing business								
Customer financing	21,487	45,089	66,575	67,500	19,841	40,899	60,739	61,763
Dealer financing	14,781	2,099	16,879	16,839	17,033	2,194	19,227	19,200
Direct banking	284	3	288	288	269	4	272	272
	36,551	**47,191**	**83,742**	**84,627**	**37,142**	**43,096**	**80,239**	**81,236**
Receivables from operating leases	219	–	219	219	193	–	193	193
Receivables from finance leases	17,446	31,501	48,948	49,572	15,810	30,153	45,963	46,766
	54,216	**78,692**	**132,909**	**134,418**	**53,145**	**73,249**	**126,395**	**128,195**

The receivables from customer financing and finance leases contained in financial services receivables of €132.9 billion (previous year: €126.4 billion) decreased by €26 million (previous year: €31 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, €175 million (previous year: €287 million) was furnished as collateral for financial liabilities and contingent liabilities.

The receivables from dealer financing include €24 million (previous year: €51 million) receivable from unconsolidated affiliated companies.

The receivables from finance leases – almost all of them for vehicles – were based on the following expected cash flows as of December 31, 2017 and December 31, 2018:

€ million	2018	2019 – 2022	from 2023	Total
Future payments from finance lease receivables	16,952	32,280	145	49,377
Unearned finance income from finance leases (discounting)	–1,142	–2,261	–11	–3,414
Present value of minimum lease payments outstanding at the reporting date	**15,810**	**30,018**	**135**	**45,963**

€ million	2019	2020 – 2023	from 2024	Total
Future payments from finance lease receivables	18,768	33,611	156	52,534
Unearned finance income from finance leases (discounting)	–1,321	–2,256	–9	–3,586
Present value of minimum lease payments outstanding at the reporting date	**17,446**	**31,355**	**146**	**48,948**

Accumulated loss allowances for uncollectible minimum lease payments receivable amount to €103 million (previous year: €116 million).

17. Noncurrent and current other financial assets

	CARRYING AMOUNT			CARRYING AMOUNT		
€ million	Current	Noncurrent	Dec. 31, 2018	Current	Noncurrent	Dec. 31, 2017
Positive fair value of derivatives	2,047	1,932	3,979	2,845	4,091	6,936
Marketable securities	–	–	–	–	3	3
Receivables from loans, bonds, profit participation rights (excluding interest)	5,513	3,441	8,953	5,367	2,531	7,898
Miscellaneous financial assets	4,026	1,149	5,175	3,786	1,829	5,615
	11,586	**6,521**	**18,107**	**11,998**	**8,455**	**20,453**

Other financial assets include receivables from related parties of €8.8 billion (previous year: €7.7 billion). Other financial assets amounting to €89 million (previous year: €75 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, 2018	Dec. 31, 2017
Transactions for hedging		
foreign currency risk from assets using fair value hedges	109	228
foreign currency risk from liabilities using fair value hedges	77	108
interest rate risk using fair value hedges	561	400
interest rate risk using cash flow hedges	54	86
foreign currency and price risk from future cash flows (cash flow hedges)	2,049	4,401
Hedging transactions Total	**2,851**	**5,224**
Assets related to derivatives not included in hedging relationships	1,128	1,712
Total	**3,979**	**6,936**

Positive fair values of €24 million (previous year: €17 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".

18. Noncurrent and current other receivables

€ million	CARRYING AMOUNT			CARRYING AMOUNT		
	Current	Noncurrent	Dec. 31, 2018	Current	Noncurrent	Dec. 31, 2017
Other recoverable income taxes	4,189	773	4,962	3,881	896	4,777
Miscellaneous receivables	2,015	1,835	3,849	1,465	1,356	2,821
	6,203	**2,608**	**8,811**	**5,346**	**2,252**	**7,598**

Miscellaneous receivables include assets to fund post-employment benefits in the amount of €76 million (previous year: €64 million). This item also includes the share of the technical provisions attributable to reinsurers amounting to €60 million (previous year: €73 million).

Current other receivables are predominantly non-interest-bearing.

19. Tax assets

€ million	CARRYING AMOUNT			CARRYING AMOUNT		
	Current	Noncurrent	Dec. 31, 2018	Current	Noncurrent	Dec. 31, 2017
Deferred tax assets	–	10,131	10,131	–	9,810	9,810
Tax receivables	1,879	476	2,355	1,339	407	1,746
	1,879	**10,606**	**12,486**	**1,339**	**10,217**	**11,557**

€6,036 million (previous year: €7,456 million) of the deferred tax assets are due within one year.

20. Inventories

€ million	Dec. 31, 2018	Dec. 31, 2017
Raw materials, consumables and supplies	5,543	4,858
Work in progress	4,382	4,143
Finished goods and purchased merchandise	30,553	26,514
Current lease assets	5,107	4,774
Prepayments	168	127
Hedges on inventories	–8	–
	45,745	**40,415**

At the same time as the relevant revenue was recognized, inventories in the amount of €179 billion (previous year: €173 billion) were included in cost of sales. Loss allowances (excluding lease assets) recognized as expenses in the reporting period amounted to €902 million (previous year: €878 million). Vehicles amounting to €316 million (previous year: €271 million) were assigned as collateral for partial retirement obligations.

21. Trade receivables

€ million	Dec. 31, 2018	Dec. 31, 2017
Trade receivables from		
third parties	13,356	9,667
unconsolidated subsidiaries	206	220
joint ventures	3,958	3,341
associates	51	44
other investees and investors	317	86
	17,888	**13,357**

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

In connection with the revised classification of financial instruments required by IFRS 9, receivables from dealer financing of €2.9 billion were reclassified to trade receivables as of January 1, 2018.

The trade receivables include contingent receivables from long-term construction contracts recognized using the percentage of completion (PoC) method. They correspond to the contract assets recognized under contracts with customers; they changed as follows:

€ million	2018
Contingent construction contract receivables Balance at Jan. 1	**338**
Additions and disposals	4
Changes in consolidated Group	–
Change in loss allowances	10
Changes in estimates and assumptions as well as contract modifications	–
Foreign exchange differences	0
Contingent construction contract receivables at Dec. 31	**352**

22. Marketable securities

The marketable securities serve to safeguard liquidity. They are short-term fixed-income securities and shares. Most securities are measured at fair value. Noncurrent marketable securities amounting to €997 million (previous year: €1,744 million) were pledged 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.

23. Cash, cash equivalents and time deposits

€ million	Dec. 31, 2018	Dec. 31, 2017
Bank balances	28,522	18,343
Checks, cash-in-hand, bills and call deposits	416	114
	28,938	**18,457**

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.

Authorized capital of up to €110 million created by a resolution of the Annual General Meeting on April 19, 2012 for the issue of new ordinary bearer shares or preferred shares expired on April 18, 2017. Apart from an amount of €83 million, the authorized capital was utilized.

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 June 2017, Volkswagen AG placed unsecured subordinated hybrid notes with an aggregate principal amount of €3.5 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 (€1.5 billion and a coupon of 2.700%) is after 5.5 years, and the first call date for the second tranche (€2.0 billion and a coupon of 3.875%) is after ten years.

In June 2018, Volkswagen AG placed unsecured subordinated hybrid notes with an aggregate principal amount of €2.8 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 (€1.3 billion and a coupon of 3.375%) is after 6 years, and the first call date for the second tranche (€1.5 billion and a coupon of 4.625%) is after ten years.

Interest may be accumulated depending on whether a dividend is paid to Volkswagen AG shareholders. Under IAS 32, these 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. IAS 32 only allows these hybrid notes to be classified as debt once the respective hybrid note was called.

In July 2018, Volkswagen AG called the first tranche of hybrid notes with an aggregate principal amount of €1.3 billion placed in 2013 via a subsidiary, Volkswagen International Finance N.V., Amsterdam, the Netherlands, (issuer). In this figure, effects of €14 million were considered in equity.

CHANGE IN ORDINARY AND PREFERRED SHARES AND SUBSCRIBED CAPITAL

	SHARES		€	
	2018	2017	2018	2017
Balance at January 1	501,295,263	501,295,263	1,283,315,873	1,283,315,873
Capital increase	–	–	–	–
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. 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 €2,419 million are eligible for distribution following the transfer of €2,204 million to the revenue reserves. The Board of Management and Supervisory Board will propose to the Annual General Meeting that a total dividend of €2,419 million, i.e. €4.80 per ordinary share and €4.86 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 €3.90 per ordinary share and €3.96 per preferred share was distributed in fiscal year 2018.

NONCONTROLLING INTERESTS

As of December 31, 2018, total noncontrolling interests amounted to €225 million (previous year: €229 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:

€ million	CARRYING AMOUNT			CARRYING AMOUNT		
	Current	Noncurrent	Dec. 31, 2018	Current	Noncurrent	Dec. 31, 2017
Bonds	19,132	62,416	81,549	14,146	48,971	63,118
Commercial paper and notes	22,381	18,975	41,356	22,506	13,399	35,905
Liabilities to banks	18,455	15,447	33,903	14,487	15,357	29,844
Deposits business	28,555	1,455	30,010	29,291	2,114	31,405
Loans and miscellaneous liabilities	1,183	2,433	3,617	1,363	1,358	2,721
Finance lease liabilities	51	399	449	51	428	479
	89,757	**101,126**	**190,883**	**81,844**	**81,628**	**163,472**

26. Noncurrent and current other financial liabilities

€ million	CARRYING AMOUNT			CARRYING AMOUNT		
	Current	Noncurrent	Dec. 31, 2018	Current	Noncurrent	Dec. 31, 2017
Negative fair values of derivative financial instruments	1,439	1,134	2,573	1,212	1,034	2,246
Interest payable	661	113	774	570	44	614
Miscellaneous financial liabilities	7,316	1,972	9,288	6,788	1,586	8,374
	9,416	**3,219**	**12,635**	**8,570**	**2,665**	**11,234**

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

€ million	Dec. 31, 2018	Dec. 31, 2017
Transactions for hedging		
foreign currency risk from assets using fair value hedges	65	58
foreign currency risk from liabilities using fair value hedges	10	19
interest rate risk using fair value hedges	61	64
interest rate risk using cash flow hedges	17	24
foreign currency and price risk from future cash flows (cash flow hedges)	936	542
Hedging transactions Total	**1,088**	**706**
Liabilities related to derivatives not included in hedging relationships	1,484	1,540
Total	**2,573**	**2,246**

Negative fair values of €22 million (previous year: €22 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, 2018	Current	Noncurrent	Dec. 31, 2017
Payments received on account of orders	6,936	4,300	11,235	5,427	2,789	8,216
Liabilities relating to						
other taxes	2,273	112	2,384	2,301	249	2,550
social security	546	43	589	564	38	601
wages and salaries	5,299	947	6,247	4,941	844	5,785
Miscellaneous liabilities	2,539	1,046	3,585	2,728	2,280	5,009
	17,593	**6,448**	**24,041**	**15,961**	**6,199**	**22,160**

The liabilities from payments on account received under contracts with customers correspond to contract liabilities under contracts with customers.

During the implementation of IFRS 15, adjustments were made to the structure of payments received on account within noncurrent and current other liabilities. In this context, amounts were reclassified from “miscellaneous liabilities” to “payments received on account of orders”. The prior-year figures were adjusted by an amount of €3,437 million.

The “payments received on account of orders” item includes liabilities from payments on account received under contracts with customers. They changed as follows:

CHANGES IN LIABILITIES FROM PAYMENTS ON ACCOUNT RECEIVED UNDER CONTRACTS WITH CUSTOMERS IN 2018

€ million	2018
Liabilities from advance payments received under contracts with customers at Jan. 1	**7,261**
Additions and disposals	2,395
Changes in consolidated Group	4
Changes in estimates and assumptions as well as contract modifications	–
Foreign exchange differences	8
Liabilities from advance payments received under contracts with customers at Dec. 31	**9,669**

28. Tax liabilities

	CARRYING AMOUNT			CARRYING AMOUNT		
€ million	Current	Noncurrent	Dec. 31, 2018	Current	Noncurrent	Dec. 31, 2017
Deferred tax liabilities	–	5,030	5,030	–	5,636	5,636
Provisions for taxes	1,412	3,047	4,458	1,397	3,030	4,427
Tax payables	456	–	456	430	–	430
	1,867	**8,077**	**9,944**	**1,827**	**8,666**	**10,492**

€407 million (previous year: €320 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 2018, they amounted to a total of €2,385 million (previous year: €2,214 million) in the Volkswagen Group. Of this figure, contributions to the compulsory state pension system in Germany amounted to €1,745 million (previous year: €1,634 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 and the Netherlands. 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 €20 million for fiscal year 2019.

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 2018, €14 million (previous year: €17 million) was recognized as an expense for health care costs. The related carrying amount as of December 31, 2018 was €231 million (previous year: €210 million).

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

€ million	Dec. 31, 2018	Dec. 31, 2017
Present value of funded obligations	15,606	15,605
Fair value of plan assets	10,920	11,192
Funded status (net)	4,686	4,413
Present value of unfunded obligations	28,312	28,224
Amount not recognized as an asset because of the ceiling in IAS 19	23	29
Net liability recognized in the balance sheet	**33,022**	**32,666**
of which provisions for pensions	33,097	32,730
of which other assets	76	64

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 2018 G” (previous year: "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 2018 G” (previous year: "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		ABROAD	
%	2018	2017	2018	2017
Discount rate at December 31	1.97	1.88	3.16	3.52
Payroll trend	3.48	3.56	2.66	3.00
Pension trend	1.50	1.50	2.41	2.48
Employee turnover rate	1.17	1.15	3.93	3.25
Annual increase in healthcare costs	–	–	5.50	4.98

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	2018	2017
Net liability recognized in the balance sheet at January 1	**32,666**	**32,967**
Current service cost	1,410	1,372
Net interest expense	620	600
Actuarial gains (–)/losses (+) arising from changes in demographic assumptions	399	33
Actuarial gains (–)/losses (+) arising from changes in financial assumptions	–957	–616
Actuarial gains (–)/losses (+) arising from experience adjustments	–105	–88
Income/expenses from plan assets not included in interest income	–530	117
Change in amount not recognized as an asset because of the ceiling in IAS 19	3	–6
Employer contributions to plan assets	708	582
Employee contributions to plan assets	–9	–8
Pension payments from company assets	842	841
Past service cost (including plan curtailments)	24	7
Gains (–) or losses (+) arising from plan settlements	2	–1
Changes in consolidated Group	10	0
Other changes	–5	–44
Foreign exchange differences from foreign plans	–30	–37
Net liability recognized in the balance sheet at December 31	**33,022**	**32,666**

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	2018	2017
Present value of obligations at January 1	**43,829**	**43,689**
Current service cost	1,410	1,372
Interest cost	901	883
Actuarial gains(–)/losses (+) arising from changes in demographic assumptions	399	33
Actuarial gains(–)/losses (+) arising from changes in financial assumptions	–957	–616
Actuarial gains(–)/losses (+) arising from experience adjustments	–105	–88
Employee contributions to plan assets	19	33
Pension payments from company assets	842	841
Pension payments from plan assets	237	307
Past service cost (including plan curtailments)	24	7
Gains (–) or losses (+) arising from plan settlements	0	–3
Changes in consolidated Group	10	0
Other changes	–460	–41
Foreign exchange differences from foreign plans	–73	–290
Present value of obligations at December 31	**43,918**	**43,829**

Actuarial gains/losses arising from changes in demographic assumptions are mainly the result of the first-time application of the "Heubeck 2018 G" (previous year: "Heubeck 2005 G") mortality tables.

Following the regular review of our pension plans, one plan used by South American subsidiaries had to be classified as a defined contribution plan in fiscal year 2018, and this led to a change in the pension obligation reported in the above table. The decrease in the present value of the defined benefit obligation in the amount of €460 million is shown under other changes. This does not have any effect on the amount recognized in the balance sheet, because the present value of plan assets goes down by the same amount.

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, 2018 € million	DEC. 31, 2018 Change in percent	DEC. 31, 2017 € million	DEC. 31, 2017 Change in percent
Discount rate	is 0.5 percentage points higher	40,048	–8.81	39,979	–8.79
	is 0.5 percentage points lower	48,398	10.20	48,290	10.18
Pension trend	is 0.5 percentage points higher	46,147	5.07	46,055	5.08
	is 0.5 percentage points lower	41,892	–4.61	41,801	–4.63
Payroll trend	is 0.5 percentage points higher	44,382	1.05	44,398	1.30
	is 0.5 percentage points lower	43,507	–0.94	43,304	–1.20
Longevity	increases by one year	45,311	3.17	45,106	2.91

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 19 years (previous year: 19 years).

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

€ million	2018	2017
Active members with pension entitlements	25,783	26,067
Members with vested entitlements who have left the Company	2,580	2,233
Pensioners	15,555	15,530
	43,918	**43,829**

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	2018	2017
Payments due within the next fiscal year	1,160	1,151
Payments due between two and five years	5,251	4,994
Payments due in more than five years	37,508	37,685
	43,918	**43,829**

Changes in plan assets are shown in the following table:

€ million	2018	2017
Fair value of plan assets at January 1	**11,192**	**10,749**
Interest income on plan assets determined using the discount rate	281	283
Income/expenses from plan assets not included in interest income	–530	117
Employer contributions to plan assets	708	582
Employee contributions to plan assets	9	25
Pension payments from plan assets	237	307
Gains (+) or losses (–) arising from plan settlements	2	2
Changes in consolidated Group	0	–1
Other changes	–455	3
Foreign exchange differences from foreign plans	–46	–258
Fair value of plan assets at December 31	**10,920**	**11,192**

Other changes are attributable to the change in the presentation of a plan used by South American subsidiaries.

The investment of the plan assets to cover future pension obligations resulted in expenses in the amount of €250 million (previous year: income of €400 million).

Employer contributions to plan assets are expected to amount to €769 million (previous year: €617 million) in the next fiscal year.

Plan assets are invested in the following asset classes:

€ million	DEC. 31, 2018 Quoted prices in active markets	DEC. 31, 2018 No quoted prices in active markets	DEC. 31, 2018 Total	DEC. 31, 2017 Quoted prices in active markets	DEC. 31, 2017 No quoted prices in active markets	DEC. 31, 2017 Total
Cash and cash equivalents	666	2	669	585	5	590
Equity instruments	375	–	375	337	–	337
Debt instruments	1,041	4	1,044	1,578	0	1,578
Direct investments in real estate	11	100	112	2	101	104
Derivatives	–21	–17	–38	38	–60	–23
Equity funds	1,433	26	1,459	1,532	34	1,567
Bond funds	5,443	118	5,561	5,233	114	5,348
Real estate funds	193	–	193	207	–	207
Other funds	890	6	896	864	4	868
Other instruments	80	568	648	40	577	617

53.3% (previous year: 49.1%) of the plan assets are invested in German assets, 27.4% (previous year: 27.6%) in other European assets and 19.3% (previous year: 23.4%) in assets in other regions.

Plan assets include €3 million (previous year: €15 million) invested in Volkswagen Group assets and €12 million (previous year: €18 million) in Volkswagen Group debt instruments.

The following amounts were recognized in the income statement:

€ million	2018	2017
Current service cost	1,410	1,372
Net interest on the net defined benefit liability	623	602
Past service cost (including plan curtailments)	24	7
Gains (–) or losses (+) arising from plan settlements	2	–1
Net income (–) and expenses (+) recognized in profit or loss	**2,059**	**1,981**

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

30. Noncurrent and current other provisions

€ million	Obligations arising from sales	Employee expenses	Litigation and legal risks	Miscellaneous provisions	Total
Balance at Jan. 1, 2017	**33,027**	**4,546**	**11,717**	**7,904**	**57,193**
Foreign exchange differences	–689	–61	–119	–169	–1,038
Changes in consolidated Group	13	3	–13	–27	–24
Utilization	17,546	1,450	7,444	2,334	28,774
Additions/New provisions	14,990	2,030	2,190	3,217	22,426
Unwinding of discount/effect of change in discount rate	–50	11	–25	6	–57
Reversals	1,881	193	504	962	3,540
Balance at Dec. 31, 2017	**27,865**	**4,886**	**5,802**	**7,634**	**46,186**
of which current	14,821	2,069	2,999	5,458	25,347
of which noncurrent	13,044	2,817	2,802	2,176	20,839
Balance at Jan. 1, 2018[1]	**27,867**	**4,886**	**5,802**	**7,631**	**46,185**
Foreign exchange differences	39	–17	–88	–21	–88
Changes in consolidated Group	–2	–7	–1	–44	–53
Utilization	10,437	1,632	2,396	2,415	16,880
Additions/New provisions	12,179	2,019	2,131	3,153	19,483
Unwinding of discount/effect of change in discount rate	–108	5	–19	9	–114
Reversals	2,503	99	516	662	3,780
Balance at Dec. 31, 2018	**27,035**	**5,155**	**4,913**	**7,651**	**44,754**
of which current	13,986	2,248	2,349	5,291	23,874
of which noncurrent	13,050	2,906	2,563	2,360	20,879

1 Value in the opening balance adjusted (see disclosures on IFRS 9 and IFRS 15).

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 decline in provisions for obligations regarding litigation and legal risks result primarily from the utilization of the provisions recognized in connection with the diesel issue. In addition to residual provisions relating to the diesel issue, the provisions for litigation and legal risks contain amounts related 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.

Miscellaneous provisions additionally include provisions amounting to €562 million (previous year: €534 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 of €90.29 per share 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.

Further information can be found in the “Litigation” section.

32. Trade payables

€ million	Dec. 31, 2018	Dec. 31, 2017
Trade payables to		
third parties	22,928	22,661
unconsolidated subsidiaries	235	187
joint ventures	327	64
associates	113	127
other investees and investors	4	7
	23,607	**23,046**

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

The tables below show the carrying amounts of financial instruments by measurement category:

CARRYING AMOUNT OF FINANCIAL INSTRUMENTS BY IAS 39 MEASUREMENT CATEGORY IN 2017

€ million	Dec. 31, 2017
Financial assets at fair value through profit or loss	1,712
Loans and receivables	125,550
Available-for-sale financial assets	16,182
Financial liabilities at fair value through profit or loss	1,540
Financial liabilities measured at amortized cost	198,821

CARRYING AMOUNT OF FINANCIAL INSTRUMENTS BY IFRS 9 MEASUREMENT CATEGORY IN 2018

€ million	Dec. 31, 2018
Financial assets at fair value through profit or loss	15,556
Financial assets at fair value through other comprehensive income (debt instruments)	3,542
Financial assets at fair value through other comprehensive income (equity instruments)	148
Financial assets measured at amortized cost	143,466
Financial liabilities at fair value through profit or loss	1,484
Financial liabilities measured at amortized cost	225,989

CLASSES OF FINANCIAL INSTRUMENTS

Financial instruments are divided into the following classes at the Volkswagen Group:

- financial instruments measured at fair value;
- financial instruments measured at amortized cost;
- derivative financial instruments within hedge accounting;
- not allocated to any measurement category; and
- credit commitments and financial guarantees (off-balance sheet).

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.

As a result of the initial application of IFRS 9 and IFRS 15, the carrying amounts of contract assets, lease receivables and liabilities and equity-accounted associates and joint ventures have been classified as “not allocated to any measurement category” since fiscal year 2018. Apart from those, other amounts (excluding financial instruments) may also be included here for reconciliation to the carrying amounts.

The risk variables governing the fair value of the receivables are risk-adjusted interest rates.
Financial instruments measured at fair value also include shares in partnerships and corporations.

RECONCILIATION OF BALANCE SHEET ITEMS TO CLASSES OF FINANCIAL INSTRUMENTS AS OF DECEMBER 31, 2017

	MEASURED AT FAIR VALUE	MEASURED AT AMORTIZED COST		DERIVATIVE FINANCIAL INSTRUMENTS WITHIN HEDGE ACCOUNTING	NOT ALLOCATED TO A MEASUREMENT CATEGORY	BALANCE SHEET ITEM AT DEC. 31, 2017
€ million	Carrying amount	Carrying amount	Fair value	Carrying amount	Carrying amount	
Noncurrent assets						
Equity-accounted investments	–	–	–	–	8,205	8,205
Other equity investments	243	–	–	–	1,075	1,318
Financial services receivables	–	43,096	44,093	–	30,153	73,249
Other financial assets	776	4,364	4,391	3,315	–	8,455
Current assets						
Trade receivables	–	13,357	13,357	–	–	13,357
Financial services receivables	–	37,142	37,142	–	16,003	53,145
Other financial assets	936	9,153	9,153	1,909	–	11,998
Marketable securities	15,939	–	–	–	–	15,939
Cash, cash equivalents and time deposits	–	18,457	18,457	–	–	18,457
Assets held for sale	–	–	–	–	90	90
Noncurrent liabilities						
Noncurrent financial liabilities	–	81,200	82,108	–	428	81,628
Other noncurrent financial liabilities	774	1,630	1,633	261	–	2,665
Current liabilities						
Put options and compensation rights granted to noncontrolling interest shareholders	–	3,795	3,811	–	–	3,795
Current financial liabilities	–	81,793	81,793	–	51	81,844
Trade payables	–	23,046	23,046	–	–	23,046
Other current financial liabilities	766	7,358	7,358	446	–	8,570

The classes of financial instruments have been added as part of the implementation of IFRS 9 (see the section on “Accounting policies”). The principal movement in this context was the reclassification of lease receivables and liabilities in the “measured at amortized cost” category to “not allocated to any measurement category”. Prior-year values under financial services receivables and financial liabilities have been restated. The carrying amount of lease receivables was €49,166 million (previous year: €46,156 million) and their fair value (fair value hierarchy level 3) was €49,791 million (previous year: €46,959 million). The carrying amount of lease liabilities was €449 million (previous year: €479 million) and their fair value (fair value hierarchy level 2) was €466 million (previous year: €510 million).

RECONCILIATION OF BALANCE SHEET ITEMS TO CLASSES OF FINANCIAL INSTRUMENTS AS OF DECEMBER 31, 2018

	MEASURED AT FAIR VALUE	MEASURED AT AMORTIZED COST		DERIVATIVE FINANCIAL INSTRUMENTS WITHIN HEDGE ACCOUNTING	NOT ALLOCATED TO A MEASUREMENT CATEGORY	BALANCE SHEET ITEM AT DEC. 31, 2018
€ million	Carrying amount	Carrying amount	Fair value	Carrying amount	Carrying amount	
Noncurrent assets						
Equity-accounted investments	–	–	–	–	8,434	8,434
Other equity investments	134	–	–	–	1,340	1,474
Financial services receivables	286	46,905	47,789	–	31,501	78,692
Other financial assets	772	4,240	4,252	1,510	–	6,521
Current assets						
Trade receivables	–	17,537	17,537	–	352	17,888
Financial services receivables	22	36,529	36,529	–	17,665	54,216
Other financial assets	1,094	9,179	9,179	1,341	1	11,615
Marketable securities	16,940	140	140	–	–	17,080
Cash, cash equivalents and time deposits	–	28,938	28,938	–	–	28,938
Noncurrent liabilities						
Noncurrent financial liabilities	–	100,727	100,964	–	399	101,126
Other noncurrent financial liabilities	767	2,085	2,087	368	–	3,219
Current liabilities						
Put options and compensation rights granted to noncontrolling interest shareholders	–	1,853	1,853	–	–	1,853
Current financial liabilities	–	89,707	89,707	–	51	89,757
Trade payables	–	23,607	23,607	–	–	23,607
Other current financial liabilities	718	8,010	8,010	721	–	9,449

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 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. The inputs used are not observable in an active market.

Other financial assets include receivables from tax allocations of €29 million, and other financial liabilities include liabilities from tax allocations of €33 million.

The following tables contain 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, 2017	Level 1	Level 2	Level 3
Noncurrent assets				
Other equity investments	243	103	–	140
Other financial assets	776	–	705	71
Current assets				
Other financial assets	936	–	933	3
Marketable securities	15,939	15,939	–	–
Noncurrent liabilities				
Other noncurrent financial liabilities	774	–	242	532
Current liabilities				
Other current financial liabilities	766	–	533	233

€ million	Dec. 31, 2018	Level 1	Level 2	Level 3
Noncurrent assets				
Other equity investments	134	56	25	53
Financial services receivables	286	–	–	286
Other financial assets	772	–	357	415
Current assets				
Financial services receivables	22	–	–	22
Other financial assets	1,094	–	880	214
Marketable securities	16,940	16,940	–	–
Noncurrent liabilities				
Other noncurrent financial liabilities	767	–	250	516
Current liabilities				
Other current financial liabilities	718	–	419	299

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

€ million	Dec. 31, 2017	Level 1	Level 2	Level 3
Fair value of financial assets measured at amortized cost				
Financial services receivables[1]	81,236	–	–	81,236
Trade receivables	13,357	–	13,184	173
Other financial assets	13,544	170	5,925	7,449
Cash, cash equivalents and time deposits	18,457	18,043	414	–
Fair value of financial assets measured at amortized cost	**126,594**	**18,213**	**19,523**	**88,858**
Fair value of financial liabilities measured at amortized cost				
Put options and compensation rights granted to noncontrolling interest shareholders	3,811	–	–	3,811
Trade payables	23,046	–	23,046	–
Financial liabilities[1]	163,901	50,970	111,096	1,835
Other financial liabilities	8,992	596	8,184	212
Fair value of financial liabilities measured at amortized cost	**199,749**	**51,566**	**142,326**	**5,857**

1 Prior-year figures adjusted.

€ million	Dec. 31, 2018	Level 1	Level 2	Level 3
Fair value of financial assets measured at amortized cost				
Financial services receivables	84,319	–	–	84,319
Trade receivables	17,537	–	17,537	–
Other financial assets	13,432	378	5,033	8,020
Cash, cash equivalents and time deposits	28,938	28,115	823	–
Fair value of financial assets measured at amortized cost	**144,226**	**28,493**	**23,394**	**92,339**
Fair value of financial liabilities measured at amortized cost				
Put options and compensation rights granted to noncontrolling interest shareholders	1,853	–	–	1,853
Trade payables	23,607	–	23,607	–
Financial liabilities	190,671	59,089	131,316	266
Other financial liabilities	10,097	1,297	8,568	233
Fair value of financial liabilities measured at amortized cost	**226,228**	**60,386**	**163,491**	**2,352**

Other financial assets include receivables from tax allocations of €29 million, and other financial liabilities include liabilities from tax allocations of €33 million.

DERIVATIVE FINANCIAL INSTRUMENTS WITHIN HEDGE ACCOUNTING BY LEVEL

€ million	Dec. 31, 2017	Level 1	Level 2	Level 3
Noncurrent assets				
Other financial assets	3,315	–	3,315	–
Current assets				
Other financial assets	1,909	–	1,909	–
Noncurrent liabilities				
Other noncurrent financial liabilities	261	–	261	–
Current liabilities				
Other current financial liabilities	446	–	445	0

€ million	Dec. 31, 2018	Level 1	Level 2	Level 3
Noncurrent assets				
Other financial assets	1,510	–	1,510	–
Current assets				
Other financial assets	1,341	–	1,341	–
Noncurrent liabilities				
Other noncurrent financial liabilities	368	–	368	0
Current liabilities				
Other current financial liabilities	721	–	721	–

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 that are listed and traded on a public market. Fair values in Level 2, for example of derivatives, are measured on the basis of 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. Fair Values in Level 3 are calculated using valuation techniques that incorporate inputs that are not directly 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, residual value protection models, customer financing receivables, receivables from vehicle financing programs and other equity investments 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. The measurement of vehicle financing programs requires in particular the use of the corresponding vehicle price.

The table below provides a summary of changes in level 3 balance sheet items measured at fair value:

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, 2017	**152**	**230**
Foreign exchange differences	–9	–1
Total comprehensive income	68	526
recognized in profit or loss	72	526
recognized in other comprehensive income	–4	0
Additions (purchases)	47	115
Sales and settlements	–11	–104
Transfers into Level 2	–31	–2
Balance at Dec. 31, 2017	**215**	**765**
Total gains or losses recognized in profit or loss	**72**	**–526**
Net other operating expense/income	–	–
of which attributable to assets/liabilities held at the reporting date	–	–
Financial result	72	–526
of which attributable to assets/liabilities held at the reporting date	32	–525

€ million	Financial assets measured at fair value	Financial liabilities measured at fair value
Balance at Jan. 1, 2018	**823**[1]	**765**
Foreign exchange differences	–33	–3
Changes in consolidated Group	–184	–
Total comprehensive income	78	204
recognized in profit or loss	27	204
recognized in other comprehensive income	51	–
Additions (purchases)	339	28
Sales and settlements	–2	–183
Transfers into Level 2	–32	5
Balance at Dec. 31, 2018	**990**	**816**
Total gains or losses recognized in profit or loss	**27**	**–204**
Net other operating expense/income	31	–203
of which attributable to assets/liabilities held at the reporting date	58	–235
Financial result	–4	0
of which attributable to assets/liabilities held at the reporting date	–5	–

1 Value in the opening balance adjusted (see disclosures on IFRS 9).

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, 2018, earnings after tax would have been €59 million (previous year: €10 million) higher (lower). The equity is not affected.

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 at December 31, 2018 had been 10% higher, earnings after tax would have been €3 million (previous year: €3 million) higher. If the assumed enterprise values at December 31, 2018 had been 10% lower, earnings after tax would have been €3 million (previous year: €3 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 buyback 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 of the used cars covered by the residual value protection model had been 10% higher as of December 31, 2018, earnings after tax would have been €325 million (previous year: €319 million) higher. If the prices of the used cars covered by the residual value protection model had been 10% lower as of December 31, 2018, earnings after tax would have been €352 million (previous year: €333 million) lower.

If the risk-adjusted interest rates applied to receivables measured at fair value had been 100 basis points higher as of December 31, 2018, earnings after tax would have been €1 million lower. If the risk-adjusted interest rates as of December 31, 2018 had been 100 basis points lower, earnings after tax would have been €4 million higher.

If the corresponding vehicle price used in the vehicle financing programs had been 10% higher as of December 31, 2018, earnings after tax would have been €8 million higher. If the corresponding vehicle prices used in the vehicle financing programs had been 10% lower as of December 31, 2018, earnings after tax would have been €8 million lower.

If the result of operations of equity investments measured at fair value had been 10% better as of December 31, 2018, the equity would have been €3 million higher. If the result of operations had been 10% worse, the equity would have been €3 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: Financial instruments	Amounts that are not set off in the balance sheet: Collateral received	Net amount at Dec. 31, 2017
Derivatives	6,936	0	6,936	–1,036	–197	5,704
Financial services receivables	126,877	–482	126,395	–	–67	126,328
Trade receivables	13,356	0	13,356	0	–1	13,355
Marketable securities	15,939	–	15,939	–	–	15,939
Cash, cash equivalents and time deposits	18,457	–	18,457	–	–	18,457
Other financial assets	13,780	–20	13,760	–	–	13,760

€ 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: Financial instruments	Amounts that are not set off in the balance sheet: Collateral received	Net amount at Dec. 31, 2018
Derivatives	3,979	0	3,979	–1,819	–171	1,989
Financial services receivables	132,909	–	132,909	–	–77	132,831
Trade receivables	17,537	0	17,537	0	–	17,536
Marketable securities	17,080	–	17,080	–	–	17,080
Cash, cash equivalents and time deposits	28,938	–	28,938	–	–	28,938
Other financial assets	14,307	–15	14,291	–	–	14,291

Other financial assets include receivables from tax allocations of €29 million.

€ 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, 2017
				Financial instruments	Collateral pledged	
Put options and compensation rights granted to noncontrolling interest shareholders	3,795	–	3,795	–	–	3,795
Derivatives	2,254	–7	2,246	–904	–12	1,330
Financial liabilities	163,472	–	163,472	–	–2,795	160,677
Trade payables	23,046	0	23,046	0	–	23,045
Other financial liabilities	9,483	–495	8,988	–	–	8,988

€ 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, 2018
				Financial instruments	Collateral pledged	
Put options and compensation rights granted to noncontrolling interest shareholders	1,853	–	1,853	–	–	1,853
Derivatives	2,573	0	2,573	–1,738	–1	834
Financial liabilities	190,883	–	190,883	–	–1,953	188,931
Trade payables	23,607	0	23,607	0	–	23,607
Other financial liabilities	10,111	–15	10,095	–	–	10,095

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.

Other financial liabilites include receivables from tax allocations of €33 million.

ASSET-BACKED SECURITIES TRANSACTIONS

Asset-backed securities transactions with financial assets amounting to €27,906 million (previous year: €24,561 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 €32,669 million (previous year: €26,689 million). Collateral of €47,884 million (previous year: €41,799 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, 2018, the fair value of the assigned receivables still recognized in the balance sheet was €32,944 million (previous year: €27,089 million). The fair value of the related liabilities was €30,122 million (previous year: €24,511 million) at that reporting date.

Companies of the Volkswagen Financial Services subgroup are contractually obliged, under certain conditions, to transfer funds to the structured entities that are included in its 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.

Other disclosures

33. Cash flow statement

Cash flows are presented in the cash flow statement classified into cash flows from operating activities, investing activities and financing activities, irrespective of the balance sheet classification.

Cash flows from operating activities are derived indirectly from earnings before tax. Earnings before tax are adjusted to eliminate noncash expenditures (mainly depreciation, amortization and impairment losses) and income. Other noncash income and expense results mainly from measurement effects in connection with financial instruments and to fair value changes relating to hedging transactions (see section entitled “Other financial result”). This results in cash flows from operating activities after accounting for changes in working capital, which also include changes in lease assets and in financial services receivables.

Investing activities include additions to property, plant and equipment and equity investments, additions to capitalized development costs and investments in securities, loans and time deposits.

Financing activities include outflows of funds from dividend payments and redemption of bonds, inflows from the capital increases and issuance of bonds, and changes in other financial liabilities. Please refer to the “Equity” section for information on the in-/outflows from the issuance/repayment of hybrid capital contained in the capital contributions.

The changes in balance sheet items that are presented in the cash flow statement cannot be derived directly from the balance sheet, as the effects of currency translation and changes in the consolidated Group are non-cash transactions and are therefore eliminated.

In 2018, cash flows from operating activities include interest received amounting to €7,047 million (previous year: €6,641 million) and interest paid amounting to €1,857 million (previous year: €2,332 million). Cash flows from operating activities also include dividend payments received from joint ventures and associates of €3,493 million (previous year: €3,653 million).

Dividends amounting to €1,967 million (previous year: €1,015 million) were paid to Volkswagen AG shareholders.

€ million	Dec. 31, 2018	Dec. 31, 2017
Cash, cash equivalents and time deposits as reported in the balance sheet	28,938	18,457
Time deposits	–825	–420
Cash and cash equivalents as reported in the cash flow statement	28,113	18,038

Time deposits are not classified as cash equivalents. Time deposits have a contractual maturity of more than three months. The maximum default risk corresponds to its carrying amount.

The following table shows the classification of changes in financial liabilities into cash and non-cash transactions:

€ million	Jan. 1, 2017	Cash-effective changes	NON-CASH CHANGES Foreign exchange differences	NON-CASH CHANGES Changes in consolidated group	NON-CASH CHANGES Changes in fair values	Dec. 31, 2017
Bonds	52,022	12,402	–1,018	–	–289	63,118
Other total third-party borrowings	102,259	3,501	–5,273	–370	–240	99,875
Finance lease liabilities	539	–28	–25	–16	9	479
Total third-party borrowings	**154,819**	**15,875**	**–6,316**	**–386**	**–520**	**163,472**
Put options and compensation rights granted to noncontrolling interest shareholders	3,849	–118	–	–	64	3,795
Other financial assets and liabilities	87	–274	17	–	10	–160
Financial assets and liabilities in financing activities	**158,755**	**15,483**	**–6,299**	**–386**	**–446**	**167,107**

€ million	Jan. 1, 2018	Cash-effective changes	NON-CASH CHANGES Foreign exchange differences	NON-CASH CHANGES Changes in consolidated group	NON-CASH CHANGES Changes in fair values	Dec. 31, 2018
Bonds	63,118	20,018	–193	–	–1,395	81,549
Other total third-party borrowings	99,875	7,740	–414	11	1,674	108,886
Finance lease liabilities	479	–29	–1	–	0	449
Total third-party borrowings	**163,472**	**27,730**	**–607**	**11**	**279**	**190,883**
Put options and compensation rights granted to noncontrolling interest shareholders	3,795	–2,132	–	–	190	1,853
Other financial assets and liabilities	–160	–121	27	–	72	–182
Financial assets and liabilities in financing activities	**167,107**	**25,477**	**–581**	**11**	**541**	**192,555**

34. Financial risk management and financial instruments

1. HEDGING GUIDELINES AND FINANCIAL RISK MANAGEMENT PRINCIPLES

The principles and responsibilities for managing and controlling the risks that could arise from financial instruments are defined by the Board of Management and monitored by the Supervisory Board. General rules apply to the Group-wide risk policy; these are oriented on the statutory requirements and the "Minimum Requirements for Risk Management by Credit Institutions".

Group Treasury is responsible for operational risk management and control of risks from financial instruments. The main functions of the MAN and PHS subgroups are included in Group Treasury's operational risk management and control for risks relating to financial instruments, while the Scania subgroup is only included to a limited extent. Subgroups have their own risk management structures. The Risk Management Group Executive Committee is regularly informed about current financial risks. In addition, the Group Board of Management and the Supervisory Board are regularly updated on the current risk situation.

For more information, please see the management report on page 185-186.

2. CREDIT AND DEFAULT RISK

The credit and default risk arising from financial assets involves the risk of default by counterparties, and therefore comprises at a maximum the amount of the claims under carrying amounts receivable from them and the irrevocable credit commitments. The maximum potential credit and default risk is reduced by collateral held and other credit enhancements. Collateral is held predominantly for financial assets in the "at amortized cost" category. It relates primarily to collateral for financial services receivables and trade receivables. Collateral comprises vehicles and assets transferred as security, as well as guarantees and real property liens. Cash collateral is also used in hedging transactions.

For level 3 and 4 financial assets with objective indications of impairment as of the reporting date, the collateral provided led to a reduction in risk by €1.3 billion. Collateral of €15 million has been accepted for assets measured at fair value through profit or loss.

Significant cash and capital investments, as well as derivatives, are only entered into with national and international banks. Risk is additionally limited by a limit system based primarily on the equity base of the counterparties concerned and on credit assessments by international rating agencies. Financial guarantees issued also give rise to credit and default risk. The maximum potential credit and default risk is calculated from the amount Volkswagen would have to pay if claims were to be asserted under the guarantees. The corresponding amounts are presented in the Liquidity risk section.

There were no material concentrations of risk at individual counterparties or counterparty groups in the past fiscal year due to the global allocation of the Group's business activities and the resulting diversification. There was a slight change in the concentration of credit and default risk exposures to the German public banking sector as a whole that has arisen from Group-wide cash and capital investments as well as derivatives: the portion attributable to this sector was 9.7% at the end of 2018 compared with 7.4% at the end of 2017. Any existing concentration of risk is assessed and monitored both at the level of individual counterparties or counterparty groups and with regard to the countries in which these are based, in each case using the share of all credit and default risk exposures accounted for by the risk exposure concerned.

For China, credit and default risk exposures accounted for 25.4% at the end of 2018, as against 29.5% at the end of 2017. There were no other concentrations of credit and default risk exposures in individual countries.

CHANGES IN CREDIT RISK LOSS ALLOWANCES ON FINANCIAL ASSETS FROM JANUARY 1 TO DECEMBER 31, 2017

€ million	Specific valuation allowances	Portfolio-based valuation allowances	2017
Balance at Jan. 1, 2017	**2,092**	**2,175**	**4,268**
Exchange rate and other changes	–87	–46	–132
Changes in consolidated Group	–18	0	–18
Additions	853	525	1,378
Utilization	427	–	427
Reversals	339	676	1,014
Reclassification	20	–20	–
Balance at Dec. 31, 2017	**2,094**	**1,959**	**4,054**

LOSS ALLOWANCE

The Volkswagen Group consistently uses the expected credit loss model of IFRS 9 for all financial assets and other risk exposures.

Regarding this, IFRS 9 differentiates between the general approach and the simplified approach. The expected credit loss model under IFRS 9 takes in both loss allowances for financial assets for which there are no objective indications of impairment and loss allowances for financial assets that are already impaired. For the calculation of impairment losses, IFRS 9 distinguishes between the general approach and the simplified approach.

Under the general approach, financial assets are allocated to one of three stages, plus an additional stage for financial assets that are already impaired when acquired (stage 4). Stage 1 comprises financial assets that are recognized for the first time or for which the probability of default has not increased significantly. The expected credit losses for the next twelve months are calculated at this stage. Stage 2 comprises financial assets with a significantly increased probability of default, while financial assets with objective indications of default are allocated to stage 3. The lifetime expected credit losses are calculated at these stages. Stage 4 financial assets, which are already impaired when acquired, are subsequently measured by recognizing a loss allowance on the basis of the accumulated lifetime expected losses. Financial assets classified as impaired on acquisition remain in this category until they are derecognized.

The Volkswagen Group applies the simplified approach to trade receivables and contract assets with a significant financing component in accordance with IFRS 15. The same applies to receivables under operating or finance leases accounted for under IAS 17. Under the simplified approach, the expected losses are consistently determined for the entire life of the asset.

The tables below show the reconciliation of the loss allowance for various financial assets and financial guarantees and credit commitments:

CHANGES IN LOSS ALLOWANCE FOR FINANCIAL ASSETS MEASURED AT AMORTIZED COST FROM JANUARY 1 TO DECEMBER 31, 2018

€ million	Stage 1	Stage 2	Stage 3	Simplified approach	Stage 4	Total
Carrying amount at Jan. 1, 2018	**800**	**802**	**1,002**	**622**	**138**	**3,364**
Foreign exchange differences	–2	–7	–35	–15	–4	–63
Changes in consolidated group	4	6	15	8	0	33
Newly extended/purchased financial assets (additions)	253	–	–	176	30	459
Other changes within a stage	–69	132	195	1	16	275
Transfers to						
Stage 1	22	–67	–13	–	–	–58
Stage 2	–102	275	–39	–	–	134
Stage 3	–33	–51	445	–	–	361
Financial instruments derecognized during the period (disposals)	–120	–148	–226	–127	–33	–653
Utilization	–	–	–459	–34	–1	–493
Changes to models or risk parameters	–1	4	10	3	–2	13
Carrying amount at Dec. 31, 2018	**750**	**946**	**896**	**634**	**146**	**3,372**

CHANGES IN LOSS ALLOWANCE FOR FINANCIAL GUARANTEES AND CREDIT COMMITMENTS FROM JANUARY 1 TO DECEMBER 31, 2018

€ million	Stage 1	Stage 2	Stage 3	Stage 4	Total
Carrying amount at Jan. 1, 2018	**11**	**4**	**1**	**0**	**16**
Foreign exchange differences	0	0	0	–	0
Changes in consolidated group	–	–	–	–	–
Newly extended/purchased financial assets (additions)	11	–	–	1	12
Other changes within a stage	0	0	0	0	0
Transfers to					
Stage 1	0	0	0	–	0
Stage 2	–1	0	0	–	0
Stage 3	0	0	1	–	1
Financial instruments derecognized during the period (disposals)	–4	–4	0	–1	–9
Utilization	–	–	0	–	0
Changes to models or risk parameters	0	0	0	0	0
Carrying amount at Dec. 31, 2018	**18**	**1**	**1**	**0**	**19**

CHANGES IN LOSS ALLOWANCE FOR LEASE RECEIVABLES FROM JANUARY 1 TO DECEMBER 31, 2018

€ million	Simplified approach
Carrying amount at Jan. 1, 2018	**1,250**
Foreign exchange differences	–6
Changes in consolidated group	–
Newly extended/purchased financial assets (additions)	450
Other changes	0
Financial instruments derecognized during the period (disposals)	–465
Utilization	–54
Changes to models or risk parameters	18
Carrying amount at Dec. 31, 2018	**1,193**

The loss allowance on “assets measured at fair value” amounted to €2 million in January 2018 (Stage 1) and did not change in the course of the fiscal year.

The amount contractually outstanding for financial assets that have been derecognized in the current year and are still subject to enforcement proceedings is €293 million.

MODIFICATIONS

There were contract modifications to financial assets in the reporting period that did not lead to the derecognition of the asset. They were primarily attributable to credit ratings and relate to financial assets for which loss allowances were measured in the amount of the lifetime credit losses. For trade and lease receivables, the treatment is simplified by considering the credit rating-based modifications where the receivables are more than 30 days past due. Before the modification, amortized cost amounted to €147 million. In the reporting period, contract modifications resulted in net income/net expenses of €2 million.

As of the reporting date, the gross carrying amounts of financial assets that have been modified since initial recognition and were simultaneously reclassified from stage 2 or 3 to stage 1 in the reporting period amounted to €19 million. As a result, the measurement of the loss allowance for these financial assets was changed from lifetime expected credit losses to 12-month expected credit losses.

MAXIMUM CREDIT RISK

The table below shows the maximum credit risk to which the Volkswagen Group was exposed as of the reporting date, broken down by class to which the impairment model is applied:

MAXIMUM CREDIT RISK BY CLASS
AS OF DECEMBER 31, 2018

€ million	Dec. 31, 2018
Financial instruments measured at fair value	3,542
Financial instruments measured at amortized cost	143,466
Financial guarantees and credit commitments	4,640
not within the scope of IFRS 7	49,518
Total	**201,166**

RATING CATEGORIES

The Volkswagen Group performs a credit assessment of borrowers in all loan and lease agreements, using scoring systems for the high-volume business and rating systems for corporate customers and receivables from dealer financing. Receivables rated as good are contained in risk class 1. Receivables from customers whose credit rating is not good but have not yet defaulted are contained in risk class 2. Risk class 3 comprises all defaulted receivables.

The table below presents the gross carrying amounts of financial assets by rating category as of December 31, 2018:

GROSS CARRYING AMOUNTS OF FINANCIAL ASSETS BY RATING CATEGORY
AS OF DECEMBER 31, 2018

€ million	Stage 1	Stage 2	Stage 3	Simplified approach	Stage 4
Credit risk rating grade 1 (receivables with no credit risk – standard loans)	116,912	8,007	–	58,537	93
Credit risk rating grade 2 (receivables with credit risk – intensified loan management)	2,243	4,787	–	5,687	37
Credit risk rating grade 3 (cancelled receivables – non-performing loans)	–	–	1,719	1,017	467
Total	**119,155**	**12,794**	**1,719**	**65,241**	**597**

Furthermore, the default risk exposure for financial guarantees and credit commitments is presented below:

DEFAULT RISK FOR FINANCIAL GUARANTEES AND CREDIT COMMITMENTS AS OF DECEMBER 31,2018

€ million	Stage 1	Stage 2	Stage 3	Stage 4
Credit risk rating grade 1 (receivables with no credit risk – standard loans)	4,243	304	–	1
Credit risk rating grade 2 (receivables with credit risk – intensified loan management)	76	15	–	0
Credit risk rating grade 3 (cancelled receivables – non-performing loans)	–	–	17	4
Total	**4,318**	**319**	**17**	**5**

In addition, the credit and default risk relating to financial assets, the credit rating of financial assets that are neither past due nor impaired, and the maturities of financial assets that are past due and not impaired are presented for the previous year in the table below:

CREDIT AND DEFAULT RISK RELATING TO FINANCIAL ASSETS BY GROSS CARRYING AMOUNT AS OF DECEMBER 31, 2017

€ million	Neither past due nor impaired	Past due and not impaired	Impaired	Dec. 31, 2017
Measured at amortized cost				
Financial services receivables	124,044	2,888	2,900	129,832
Trade receivables	10,395	2,833	562	13,791
Other receivables	13,403	102	196	13,700
Measured at fair value	16,862	–	290	17,152
	164,704	**5,822**	**3,948**	**174,475**

CREDIT RATING OF THE GROSS CARRYING AMOUNTS OF FINANCIAL ASSETS THAT ARE NEITHER PAST DUE NOR IMPAIRED AS OF DECEMBER 31, 2017

€ million	Risk class 1	Risk class 2	Dec. 31, 2017
Measured at amortized cost			
Financial services receivables	104,143	19,901	124,044
Trade receivables	10,259	136	10,395
Other receivables	13,313	90	13,403
Measured at fair value	22,086	–	22,086
	149,802	**20,127**	**169,928**

MATURITY ANALYSIS OF THE GROSS CARRYING AMOUNTS OF FINANCIAL ASSETS THAT ARE PAST DUE AND NOT IMPAIRED AS OF DECEMBER 31, 2017

	PAST DUE BY			GROSS CARRYING AMOUNT
€ million	up to 30 days	within 30 to 90 days	more than 90 days	Dec. 31, 2017
Measured at amortized cost				
Financial services receivables	2,148	728	12	2,888
Trade receivables	1,164	689	980	2,833
Other receivables	43	21	37	102
Measured at fair value	–	–	–	–
	3,355	**1,438**	**1,029**	**5,822**

Collateral that was accepted for financial assets in the current fiscal year was recognized in the balance sheet in the amount of €134 million (previous year: €109 million). This mainly relates to vehicles.

3. LIQUIDITY RISK

The solvency and liquidity of the Volkswagen Group are ensured at all times by rolling liquidity planning, a liquidity reserve in the form of cash, confirmed credit lines and the issuance of securities on the international money and capital markets. The volume of confirmed bilateral and syndicated credit lines stood at €16.8 billion as of December 31, 2018 (previous year: €19.9 billion), of which €3.4 billion (previous year: €3.4 billion) was drawn down.

Local cash funds in certain countries (e.g. China, Brazil, Argentina, South Africa and India) are only available to the Group for cross-border transactions subject to exchange controls. There are no significant restrictions over and above these.

The following overview shows the contractual undiscounted cash flows from financial instruments:

MATURITY ANALYSIS OF UNDISCOUNTED CASH FLOWS FROM FINANCIAL INSTRUMENTS

€ million	REMAINING CONTRACTUAL MATURITIES				REMAINING CONTRACTUAL MATURITIES			
	up to one year	within one to five years	more than five years	2018	up to one year	within one to five years	more than five years	2017
Put options and compensation rights granted to noncontrolling interest shareholders	1,853	–	–	1,853	3,379	–	–	3,379
Financial liabilities	91,891	84,965	23,380	200,235	83,867	69,968	16,113	169,949
Trade payables	23,607	0	–	23,607	23,041	5	–	23,046
Other financial liabilities	8,010	1,916	154	10,080	7,360	1,557	86	9,003
Derivatives	63,059	42,984	3,036	109,078	72,635	47,414	332	120,381
	188,419	**129,865**	**26,570**	**344,854**	**190,281**	**118,945**	**16,531**	**325,758**

When calculating cash outflows related to put options and compensation rights, it was assumed that shares would be tendered at the earliest possible date. The cash outflows on other financial liabilities include outflows on liabilities for tax allocations amounting to €33 million.

Derivatives comprise both cash flows from derivative financial instruments with negative fair values and cash flows from derivatives with positive fair values for which gross settlement has been agreed. Derivatives entered into through offsetting transactions are also accounted for as cash outflows. The cash outflows from derivatives for which gross settlement has been agreed are matched in part by cash inflows. These cash inflows are not reported in the maturity analysis. If these cash inflows were also recognized, the cash outflows presented would be substantially lower. This applies in particular also if hedges have been closed with offsetting transactions.

The cash outflows from irrevocable credit commitments are presented in section entitled "Other financial obligations”, classified by contractual maturities.

As of December 31, 2018, the maximum potential liability under financial guarantees amounted to €315 million (previous year: €261 million). Financial guarantees are assumed to be due immediately in all cases.

4. MARKET RISK

4.1 Hedging policy and financial derivatives

During the course of its general business activities, the Volkswagen Group is exposed to foreign currency, interest rate, commodity price, equity price and fund price risk. Corporate policy is to limit or eliminate such risk by means of hedging. Generally, all necessary hedging transactions with the exception of the Scania, MAN and Porsche Holding GmbH (Salzburg) subgroups are executed or coordinated centrally by Group Treasury.

DISCLOSURES ON GAINS AND LOSSES FROM FAIR VALUE HEDGES

Fair value hedges involve hedging against the risk of changes in the carrying amount of balance sheet items. As of the reporting date, both hedging instruments and hedged items are measured at fair value in relation to the hedged risk, and the resulting changes in value are recognized on a net basis in the corresponding income statement item. In the previous year, income from fair value hedges amounted to €7 million.

The following table shows the gains and losses from (fair value) hedges by risk type during the fiscal year:

DISCLOSURES ON GAINS AND LOSSES FROM FAIR VALUE HEDGES IN 2018

€ million	Hedge ineffectiveness in hedging relationships
Hedging interest rate risk	
Other financial result	–
Other operating result	34
Hedging currency risk	
Other financial result	–
Other operating result	–30
Combined interest rate and currency risk hedging	
Other financial result	0
Other operating result	5

DISCLOSURES ON GAINS AND LOSSES FROM CASH FLOW HEDGES

Cash flow hedges are used to hedge against risks of fluctuations in future cash flows. These cash flows may arise from a recognized asset or liability, or from a highly probable forecast transaction. The following table shows the gains and losses from cash flow hedges by risk type:

DISCLOSURES ON GAINS AND LOSSES FROM CASH FLOW HEDGES IN 2018

€ million	2018
Hedging interest rate risk	
Gains or losses from changes in fair value of hedging instruments within hedge accounting	
Recognized in equity	–38
Recognized in profit or loss	0
Reclassification from the cash flow hedge reserve to profit or loss	
Due to early discontinuation of the hedging relationships	–
Due to realization of the hedged item	2
Hedging currency risk	
Gains or losses from changes in fair value of hedging instruments within hedge accounting	
Recognized in equity	–1,367
Recognized in profit or loss	–7
Reclassification from the cash flow hedge reserve to profit or loss	
Due to early discontinuation of the hedging relationships	–1
Due to realization of the hedged item	–1,074
Combined interest rate and currency risk hedging	
Gains or losses from changes in fair value of hedging instruments within hedge accounting	
Recognized in equity	8
Recognized in profit or loss	0
Reclassification from the cash flow hedge reserve to profit or loss	
Due to early discontinuation of the hedging relationships	–
Due to realization of the hedged item	–8
Hedging commodity price risk	
Gains or losses from changes in fair value of hedging instruments within hedge accounting	
Recognized in equity	–5
Recognized in profit or loss	–
Reclassification from the cash flow hedge reserve to profit or loss	
Due to early discontinuation of the hedging relationships	–
Due to realization of the hedged item	1

The table presents effects taken to equity, reduced by deferred taxes.

The gain or loss from changes in the fair value of hedging instruments used in hedge accounting corresponds to the basis for determining hedge ineffectiveness. The ineffective portion of a cash flow hedge is the income or expense resulting from changes in the fair value of the hedging instrument that exceed the changes in the fair value of the hedged item. This hedge ineffectiveness is attributable to parameter differences between the hedging instrument and the hedged item. Such income and expenses are recognized in other operating income/expenses or in the financial result. In fiscal year 2017, ineffectiveness amounting to €–11 million was recognized in the income statement. The Volkswagen Group uses two different methods to present market risk from nonderivative and derivative financial instruments in accordance with IFRS 7. For quantitative risk measurement, interest rate and foreign currency risk in the Volkswagen Financial Services subgroup are measured using a value-at-risk (VaR) model on the basis of a historical simulation, while market risk in the other Group companies is determined using a sensitivity analysis. The value-at-risk calculation indicates the size of the maximum potential loss on the portfolio as a whole within a time horizon of 40 days, measured at a confidence level of 99%. To provide the basis for this calculation, all cash flows from nonderivative and derivative financial instruments are aggregated into an interest rate gap analysis. The historical market data used in calculating value at risk covers a period of 1,000 trading days. The sensitivity analysis calculates the effect on equity and profit or loss by modifying risk variables within the respective market risks.

DISCLOSURES ON HEDGING INSTRUMENTS IN HEDGE ACCOUNTING

The Volkswagen Group regularly enters into hedging instruments to hedge against changes in the carrying amount of balance sheet items. The summary below shows the notional amounts, fair values and base variables for determining the ineffectiveness of hedging instruments entered into to hedge against the risk of changes in carrying amounts in fair value hedges:

DISCLOSURES ON HEDGING TRANSACTIONS IN FAIR VALUE HEDGES IN 2018

€ million	Notional amount	Other assets	Other liabilities	Fair value changes to determine hedge ineffectiveness
Hedging interest rate risk				
Interest rate swaps and interest rate options contracts	48,609	467	61	309
Hedging currency risk				
Currency forwards, currency options, cross-currency swaps	6,811	222	75	95
Combined interest rate and currency risk hedging				
Cross-currency interest rate swaps	901	58	0	108

In addition, hedging instruments are entered into to hedge against the risk of fluctuations in future cash flows. The table below shows the notional amounts, fair values and base variables for determining the ineffectiveness of hedging instruments designated as cash flow value hedges.

DISCLOSURES ON HEDGING TRANSACTIONS IN CASH FLOW HEDGES IN 2018

€ million	Notional amount	Other assets	Other liabilities	Fair value changes to determine hedge ineffectiveness
Hedging interest rate risk				
Interest rate swaps	12,477	39	15	17
Hedging currency risk				
Currency forwards and cross-currency swaps	66,505	1,834	836	2,794
Currency options	17,956	187	91	69
Combined interest rate and currency risk hedging				
Cross-currency interest rate swaps	1,424	44	11	35

The change in the fair value to determine ineffectiveness corresponds to the change in fair value of the designated component.

DISCLOSURES ON HEDGED ITEMS IN HEDGE ACCOUNTING

In addition to disclosures on hedging instruments, disclosures are also required on the hedged items, broken down by risk category and type of designation for hedge accounting. Below follows a list of hedged items designated in fair value hedges, separately from those designated in cash flow hedges:

DISCLOSURES ON HEDGED ITEMS IN FAIR VALUE HEDGES IN 2018

€ million	Carrying amount	Cumulative hedge adjustments	Hedge adjustments (current period/ fiscal year)	Cumulative hedge adjustments from discontinued hedging relationships
Hedging interest rate risk				
Financial services receivables	19,311	–10	20	–
Other financial assets	–	17	17	–
Financial liabilities	31,670	220	127	–
Other financial liabilities	–	–	–	–
Hedging currency risk				
Trade receivables	–	–	–	–
Financial services receivables	–	–	–	3
Other financial assets	640	28	77	–
Financial liabilities	26	36	38	–
Other financial liabilities	–	–	–	–
Trade payables	–	–	–	–
Other provisions	–	–	–	–
Combined interest rate and currency risk hedging				
Financial services receivables	–	4	4	–
Other financial assets	714	–32	–4	–
Financial liabilities	166	1	1	–
Other financial liabilities	–	–	–	–

DISCLOSURES ON HEDGED ITEMS IN CASH FLOW HEDGES IN 2018

€ million	Changes in fair value to determine hedge ineffectiveness	Reserve for: Active cash flow hedges	Reserve for: Discontinued cash flow hedges
Hedging interest rate risk			
Designated components	26	19	0
Non-designated components	–	–	–
Deferred taxes	–	–1	0
Total hedging interest rate risk	26	19	0
Hedging currency risk			
Designated components	2,526	2,524	0
Non-designated components	–	–885	–9
Deferred taxes	–	–478	1
Total hedging currency risk	2,526	1,162	–8
Combined interest rate and currency risk hedging			
Designated components	27	2	–26
Non-designated components	–	–	–
Deferred taxes	–	0	8
Total hedging combined interest rate and currency risk	27	1	–18
Hedging commodity price risk			
Designated components	–	–	7
Non-designated components	–	–	–
Deferred taxes	–	–	–2
Total hedging commodity price risk	–	–	5

CHANGES IN THE RESERVE

When accounting for cash flow hedges, the designated effective portions of a hedging relationship are recognized in OCI I. Any changes in excess of the fair value of the designated component are recognized as ineffectiveness through profit or loss.

The table below shows a reconciliation to the reserve:

CHANGES IN THE RESERVE FOR CASH FLOW HEDGES (OCI I) FROM JANUARY 1 TO DECEMBER 31, 2018

€ million	Interest rate risk	Currency risk	Interest rate/ currency risk	Commodity price risk	**Total**
Balance at Jan. 1, 2018	**55**	**3,533**	**–16**	**9**	**3,581**
Gains or losses from effective hedging relationships	–38	–414	8	–5	–450
Reclassifications due to changes in whether the hedged item is expected to occur	–	–1	–	–	–1
Reclassifications due to realization of the hedged item	2	–1,335	–8	1	–1,341
Balance at Dec. 31, 2018	**19**	**1,783**	**–17**	**5**	**1,790**

If expectations about the occurrence of the hedged item change, the arrangement is reclassified by terminating the hedging relationship prematurely. Changed expectations are primarily caused by a change in projections for hedging sales revenue.

Changes in the fair values of non-designated components of a derivative are likewise always recognized immediately through profit or loss. An exception from this principle is any change in the fair value attributable to non-designated time values of options, to the extent that they relate to the hedged item. Moreover, the Volkswagen Group initially recognizes in equity (hedging costs) changes in the fair values of non-designated forward components in currency forwards and currency hedges attributed to cash flow hedges. This means that the Volkswagen Group recognizes changes in the fair value of the non-designated component or parts thereof immediately through profit or loss only if there is ineffectiveness.

The tables below show a summary of changes in the reserve for hedging costs resulting from the non-designated portions of options and currency hedges:

CHANGES IN THE RESERVE FOR HEDGING COSTS – NON-DESIGNATED TIME VALUES OF OPTIONS FROM JANUARY 1 TO DECEMBER 31, 2018

€ million	Currency risk
Balance at Jan. 1, 2018	**63**
Gains and losses from non-designated time value of options	
Hedged item is recognized at a point in time	–86
Reclassification due to realization of the hedged item	
Hedged item is recognized at a point in time	23
Balance at Dec. 31, 2018	**–1**

CHANGES IN THE RESERVE FOR HEDGING COSTS – NON-DESIGNATED FORWARD COMPONENT AND CROSS CURRENCY BASIS SPREAD (CCBS) FROM JANUARY 1 TO DECEMBER 31, 2018

€ million	Currency risk
Balance at Jan. 1, 2018	**–**
Gains and losses from non-designated forward elements and CCBS	
Hedged item is recognized at a point in time	–866
Reclassification due to realization of the hedged item	
Hedged item is recognized at a point in time	238
Reclassification due to changes in whether the hedged item is expected to occur	
Hedged item is recognized at a point in time	0
Balance at Dec. 31, 2018	**–628**

4.2 Market risk in the Volkswagen Group (excluding Volkswagen Financial Services subgroup)

4.2.1 Foreign currency risk

Foreign currency risk in the Volkswagen Group (excluding Volkswagen Financial Services subgroup) is attributable to investments, financing measures and operating activities. Currency forwards, currency options, currency swaps and cross-currency interest rate swaps are used to limit foreign currency risk. These transactions relate to the exchange rate hedging of all material payments covering general business activities that are not made in the functional currency of the respective Group companies. The principle of matching currencies applies to the Group's financing activities.

Hedging transactions entered into in 2018 as part of foreign currency risk management were amongst others in Argentine pesos, Australian dollars, Brazilian real, sterling, Chinese renminbi, Hong Kong dollars, Indian rupees, Japanese yen, Canadian dollars, Mexican pesos, Norwegian kroner, Polish zloty, Russian rubles, Swedish kronor, Swiss francs, Singapore dollars, South African rand, South Korean won, Taiwan dollars, Czech koruna, Hungarian forints and US dollars.

All nonfunctional currencies in which the Volkswagen Group enters into financial instruments are included as relevant risk variables in the sensitivity analysis in accordance with IFRS 7.

If the functional currencies concerned had appreciated or depreciated by 10% against the other currencies, the exchange rates shown below would have resulted in the following effects on the hedging reserve in equity and on earnings after tax. It is not appropriate to add together the individual figures, since the results of the various functional currencies concerned are based on different scenarios.

The following table shows the sensitivities of the main currencies in the portfolio as of December 31, 2018:

€ million	DEC. 31, 2018		DEC. 31, 2017	
	+10%	–10%	+10%	–10%
Exchange rate				
EUR/USD				
Hedging reserve	1,329	–1,272	1,627	–1,303
Earnings after tax	–449	449	–365	193
EUR/GBP				
Hedging reserve	960	–959	1,126	–1,124
Earnings after tax	–205	205	–73	75
EUR/CNY				
Hedging reserve	729	–725	515	–491
Earnings after tax	–159	159	–58	62
EUR/CHF				
Hedging reserve	312	–298	246	–232
Earnings after tax	12	–12	16	–20
EUR/JPY				
Hedging reserve	287	–285	271	–244
Earnings after tax	–18	18	–40	20
EUR/CAD				
Hedging reserve	117	–113	121	–113
Earnings after tax	–30	30	–51	48
CZK/GBP				
Hedging reserve	135	–135	91	–91
Earnings after tax	–1	1	0	0
EUR/AUD				
Hedging reserve	97	–97	164	–164
Earnings after tax	–32	32	–36	37
EUR/SEK				
Hedging reserve	94	–92	105	–100
Earnings after tax	–35	35	–22	18
EUR/PLN				
Hedging reserve	–54	54	0	0
Earnings after tax	–52	52	–60	60
EUR/CZK				
Hedging reserve	65	–65	69	–69
Earnings after tax	–38	38	–20	20
EUR/TWD				
Hedging reserve	77	–77	72	–72
Earnings after tax	–6	6	–10	10
EUR/BRL				
Hedging reserve	8	–8	6	–6
Earnings after tax	–65	65	–20	20
EUR/HUF				
Hedging reserve	0	0	0	0
Earnings after tax	–63	63	–54	54
GBP/USD				
Hedging reserve	61	–61	63	–63
Earnings after tax	1	–1	–2	2

4.2.2 Interest rate risk

Interest rate risk in the Volkswagen Group (excluding Volkswagen Financial Services subgroup) results from changes in market interest rates, primarily for medium- and long-term variable interest receivables and liabilities. Interest rate swaps and cross-currency interest rate swaps are sometimes entered into to hedge against this risk primarily under fair value or cash flow hedges, and depending on market conditions. Intragroup financing arrangements are mainly structured to match the maturities of their refinancing. Departures from the Group standard are subject to centrally defined limits and monitored on an ongoing basis.

Interest rate risk within the meaning of IFRS 7 is calculated for these companies using sensitivity analyses. The effects of the risk-variable market rates of interest on the financial result and on equity are presented, net of tax.

If market interest rates had been 100 bps higher as of December 31, 2018, equity would have been €131 million (previous year: €88 million) lower. If market interest rates had been 100 bps lower as of December 31, 2018, equity would have been €66 million (previous year: €24 million) higher.

If market interest rates had been 100 bps higher as of December 31, 2018, earnings after tax would have been €24 million higher (previous year: €76 million lower). If market interest rates had been 100 bps lower as of December 31, 2018, earnings after tax would have been €26 million lower (previous year: €64 million higher).

4.2.3 Commodity price risk

Commodity price risk in the Volkswagen Group (excluding Volkswagen Financial Services subgroup) primarily results from price fluctuations and the availability of ferrous and non-ferrous metals, precious metals, commodities required in connection with the Group’s digitalization and electrification strategy, as well as of coal, CO_2 certificates and rubber.

Commodity price risk is limited by entering into forward transactions and swaps.

Commodity price risk within the meaning of IFRS 7 is presented using sensitivity analyses. These show the effect on earnings after tax of changes in the risk variable commodity prices.

If the commodity prices of the hedged nonferrous metals, coal and rubber had been 10% higher (lower) as of December 31, 2018, earnings after tax would have been €197 million (previous year: €101 million) higher (lower).

4.2.4 Equity and bond price risk

The special funds launched using surplus liquidity and the equity interests measured at fair value are subject in particular to equity price and bond price risk, which can arise from fluctuations in quoted market prices, stock exchange indices and market rates of interest. The changes in bond prices resulting from variations in the market rates of interest are quantified in sections 4.2.1 and 4.2.2, as are the measurement of foreign currency and other interest rate risks arising from the special funds and the equity interests measured at fair value. As a rule, risks arising from the special funds are countered by ensuring a broad diversification of products, issuers and regional markets when investing funds, as stipulated by the Investment Guidelines of the Group. In addition, we hedge exchange rates when market conditions are appropriate.

As part of the presentation of market risk, IFRS 7 requires disclosures on how hypothetical changes in risk variables affect the price of financial instruments. Potential risk variables here are in particular quoted market prices or indices, as well as interest rate changes as bond price parameters.

If share prices had been 10% higher as of December 31, 2018, earnings after tax would have been €16 million higher and equity would have been €4 million (previous year: €28 million effect on equity) higher. If share prices had been 10% lower as of December 31, 2018, earnings after tax would have been €25 million lower and the equity €4 million (previous year: €108 million effect on equity) lower.

4.3 Market risk at Volkswagen Financial Services subgroup

Exchange rate risk in the Volkswagen Financial Services subgroup is mainly attributable to assets that are not denominated in the functional currency and from refinancing within operating activities. Interest rate risk relates to refinancing without matching maturities and the varying interest rate elasticity of individual asset and liability items. The risks are limited by the use of currency and interest rate hedges.

Microhedges and portfolio hedges are used for interest rate hedging. Fixed-rate assets and liabilities included in the hedging strategy are recognized at fair value, as opposed to their original subsequent measurement at amortized cost. The resulting effects in the income statement are offset by the corresponding gains and losses on the interest rate hedging instruments (swaps). Currency hedges (currency forwards and cross-currency interest rate swaps) are used to mitigate foreign currency risk. All cash flows in foreign currency are hedged.

As of December 31, 2018, the value at risk was €122 million (previous year: €167 million) for interest rate risk and €187 million (previous year: €165 million) for foreign currency risk.

The entire value at risk for interest rate and foreign currency risk at the Volkswagen Financial Services subgroup was €214 million (previous year: €167 million).

5. METHODS FOR MONITORING HEDGE EFFECTIVENESS

Since the implementation of IFRS 9, the Volkswagen Group determines hedge effectiveness mainly on a prospective basis using the critical terms match method. Retrospective analysis of effectiveness uses effectiveness tests in the form of the dollar offset method. Under the dollar offset method, the changes in value of the hedged item expressed in monetary units are compared with the changes in value of the hedging instrument expressed in monetary units.

To this end, the accumulated changes in the fair value of the designated spot component of the hedging instrument and hedged item are compared. If the critical terms do not match, the same procedure is applied to the non-designated component.

NOTIONAL AMOUNT OF DERIVATIVES

The summary below presents the remaining maturities profile of the notional amounts of the hedging instruments, which are accounted for under the Volkswagen Group's hedge accounting rules, and of derivatives to which hedge accounting is not applied:

NOTIONAL AMOUNT OF DERIVATIVES IN 2017

	REMAINING TERM			TOTAL NOTIONAL AMOUNT
€ million	up to one year	within one to five years	more than five years	Dec. 31, 2017
Notional amount of hedging instruments used in cash flow hedges				
Interest rate swaps	3,490	8,999	38	12,527
Currency forwards	32,329	35,538	–	67,867
Currency options	8,128	11,435	–	19,563
Currency swaps	–	–	–	–
Cross-currency interest rate swaps	387	165	–	551
Commodity futures contracts	–	–	–	–
Notional amount of other derivatives				
Interest rate swaps	20,483	48,067	20,125	88,675
Interest rate option contracts	–	–	–	–
Currency forwards	19,592	2,942	2	22,535
Other currency options	10	–	–	10
Currency swaps	20,825	1,451	–	22,276
Cross-currency interest rate swaps	3,350	6,025	293	9,667
Commodity futures contracts	798	477	–	1,275

NOTIONAL AMOUNT OF DERIVATIVES IN 2018

€ million	REMAINING TERM up to one year	within one to five years	more than five years	TOTAL NOTIONAL AMOUNT Dec. 31, 2018
Notional amount of hedging instruments within hedge accounting				
Hedging interest rate risk				
Interest rate swap	11,136	43,360	6,590	61,086
Hedging currency risk				
Currency forwards/Cross-currency swaps				
Currency forwards/Cross-currency swaps in CNY	6,857	2,555	–	9,412
Currency forwards/Cross-currency swaps in GBP	11,524	6,746	–	18,270
Currency forwards/Cross-currency swaps in USD	7,451	11,412	–	18,863
Currency forwards/Cross-currency swaps in other currencies	16,905	9,866	–	26,770
Currency options				
Currency options in USD	5,903	3,781	–	9,683
Currency options in CNY	2,539	1,523	–	4,062
Currency options in other currencies	1,295	2,915	–	4,210
Combined interest rate and currency risk hedging				
Cross-currency interest rate swaps	1,090	1,235	–	2,325
Notional amount of other derivatives				
Hedging Interest rate risk				
Interest rate swap	20,303	26,293	19,762	66,358
Hedging Currency risk				
Currency forwards/Cross-currency swaps				
Currency forwards/Cross-currency swaps in USD	8,626	3,777	1	12,403
Currency forwards/Cross-currency swaps in other currencies	15,732	1,804	0	17,537
Currency options				
Currency options	215	–	–	215
Combined interest rate and currency risk hedging				
Cross-currency interest rate swaps	5,930	5,594	926	12,450
Hedging Commodity price risk				
Forward commodity contracts aluminum	923	1,208	–	2,131
Forward commodity contracts copper	241	445	–	686
Forward commodity contracts other	131	304	–	436

Both derivatives closed with offsetting transactions and the offsetting transactions themselves are included in the respective notional amount. The offsetting transactions cancel out the effects of the original hedging transactions. If the offsetting transactions were not included, the respective notional amount would be significantly lower. In addition to the derivatives used for hedging foreign currency, interest rate and price risk, the Group held options and other derivatives on equity instruments at the reporting date with a notional amount of €3,762 million (previous year: €29 million) whose remaining maturity is under one year, as well as credit default swaps in connection with fund investments with a notional amount of €21 billion.

Existing cash flow hedges in the notional amount of €53 million (previous year: €361 million) were discontinued because of a reduction in the projections. €3 million was transferred from the cash flow hedge reserve to the financial result in the previous year, reducing earnings. In addition, hedges were to be terminated due to internal risk regulations.

Items hedged under cash flow hedges are expected to be realized in accordance with the maturity buckets of the hedges reported in the table. For cash flow hedges, the Volkswagen Group achieved an average hedging interest rate of 1.65% for hedging interest rate risk. In addition, currency risk was hedged at the following hedging exchange rates for the major currency pairs: EUR/USD at 1.19; EUR/GBP at 0.86; EUR/CNY at 8.20.

The fair values of the derivatives are estimated using market data at the balance sheet date as well as by appropriate valuation techniques. The following term structures were used for the calculation:

in %	EUR	AUD	CHF	CNY	GBP	JPY	PLN	SEK	USD
Interest rate for six months	–0.3061	1.9938	–0.5510	3.2700	0.9170	0.0868	1.7892	–0.1043	2.7736
Interest rate for one year	–0.2631	1.9515	–0.5517	3.2174	0.9836	0.0087	1.7754	–0.0659	2.7653
Interest rate for five years	0.1970	2.2188	–0.1390	3.6600	1.3050	0.0238	2.1250	0.5080	2.5942
Interest rate for ten years	0.8150	2.5563	0.2950	4.1500	1.4365	0.1763	2.4810	1.1280	2.7330

35. Capital management

The Group's capital management ensures that its goals and strategies can be achieved in the interests of shareholders, employees and other stakeholders. In particular, management focuses on generating the minimum return on invested assets in the Automotive Division that is required by the capital markets, and on increasing the return on equity in the Financial Services Division. In the process, it aims overall to achieve the highest possible growth in the value of the Group and its divisions for the benefit of all the Company's stakeholder groups.

In order to maximize the use of resources in the Automotive Division and to measure the success of this, we have for a number of years been using a value-based management system, with value contribution as an absolute performance measure and return on investment (ROI) as a relative indicator.

Value contribution is defined as the difference between operating profit after tax and the opportunity cost of invested capital. The opportunity cost of capital is calculated by multiplying the market cost of capital by average invested capital. Invested capital is calculated by taking the operating assets reported in the balance sheet (property, plant and equipment, intangible assets, lease assets, inventories and receivables) and deducting non-interest-bearing liabilities (trade payables and payments on account received). Average invested capital is derived from the balance sheet at the beginning and the end of the reporting period. Despite the charges relating to the special items recognized in the operating result, the Automotive Division disclosed a positive value contribution of €4,964 million in the reporting period which, due to the improvement in the operating result before special items and an only slight increase in the cost of capital, was significantly higher than the prior-year figure.

The return on investment is defined as the return on invested capital for a particular period based on the operating result after tax. If the return on investment exceeds the market cost of capital, there is an increase in the value of the invested capital and a positive value contribution. In the Group, a minimum required rate of return on invested capital of 9% is defined, which applies to both the business units and the individual products and product lines. Our goal of generating a sustained return on investment of over 15% is anchored in Strategy 2025. The return on investment therefore serves as a consistent target in operational and strategic management and is used to measure target attainment for the Automotive Division, the individual business units, and projects and products. The return on investment achieved for the Automotive Division was 11.0%, which is above our minimum rate of return on invested capital of 9% and significantly exceeds the current cost of capital of 6.2%.

Due to the specific features of the Financial Services Division, its management focuses on return on equity, a special target linked to invested capital. This measure is calculated as the ratio of earnings before tax to average equity. Average equity is calculated from the balance at the beginning and the end of the reporting period. In addition, the goals of the Financial Services Division are to meet the banking supervisory authorities' regulatory capital requirements, to procure equity for the growth planned in the coming fiscal years and to support its external rating by ensuring capital adequacy. To ensure compliance with prudential requirements at all times, a planning procedure integrated into internal reporting has been put in place at the Volkswagen Bank, allowing the required equity to be continuously determined on the basis of actual and expected business performance. In the reporting period, this again ensured that regulatory minimum capital requirements were always met both at Group level and at the level of subordinate companies' individual, specific capital requirements.

The return on investment and value contribution in the Automotive Division as well as the return on equity and the equity ratio in the Financial Services Division are shown in the following table:

€ million	2018	2017
Automotive Division[1]		
Operating result after tax	11,438	11,756
Invested capital (average)	104,424	97,021
Return on investment (ROI) in %	**11.0**	**12.1**
Cost of capital in %	6.2	6.0
Opportunity cost of invested capital	6,474	5,821
Value contribution[2]	**4,964**	**5,935**
Financial Services Division		
Earnings before tax	2,782	2,502
Average equity	27,982	25,626
Return on equity before tax in %	**9.9**	**9.8**
Equity ratio in %	**12.7**	**13.7**

1 Including proportionate inclusion of the Chinese joint ventures and allocation of consolidation adjustments between the Automotive and Financial Services Divisions; excluding effects on earnings and assets from purchase price allocation.
2 The value contribution corresponds to the Economic Value Added (EVA®). EVA® is a registered trademark of Stern Stewart & Co.

36. Contingent liabilities

€ million	Dec. 31, 2018	Dec. 31, 2017
Liabilities under guarantees	511	423
Liabilities under warranty contracts	138	60
Assets pledged as security for third-party liabilities	18	21
Other contingent liabilities	8,607	7,909
	9,274	**8,413**

The trust assets and liabilities of the savings and trust entities belonging to the South American subsidiaries not included in the consolidated balance sheet amount to €558 million (previous year: €768 million).

In the case of liabilities from guarantees, the Group is required to make specific payments if the debtors fail to meet their obligations.

The other contingent liabilities primarily comprise potential liabilities arising from matters relating to taxes and customs duties, as well as litigation and proceedings relating to suppliers, dealers, customers, employees and investors. The contingent liabilities recognized in connection with the diesel issue totaled €5.4 billion (previous year: €4.3 billion), of which €3.4 billion (previous year: €3.4 billion) was attributable to investor lawsuits. Also included are certain elements of the class action lawsuits and proceedings/misdemeanor proceedings relating to the diesel issue as far as these can be quantified. As some of these proceedings are still at a very early stage, the plaintiffs have in a number of cases so far not specified the basis of their claims and/or there is insufficient certainty about the number of plaintiffs or the amounts being claimed. These lawsuits meet the definition of a contingent liability but cannot, as a rule, be disclosed because it is impossible to measure the amount involved. The administrative fine proceedings in accordance with section 30, 130 of the Gesetz über Ordnungswidrigkeiten (OWiG – Act on Regulatory Offenses) instituted against Porsche AG on January 21, 2019 are likewise at a very early stage. In the absence of measurable data, no contingent liability has therefore been recognized for these proceedings.

In addition, other contingent liabilities include an amount of €0.7 billion for potential liabilities resulting from the risk of tax proceedings instituted by the Brazilian tax authorities against MAN Latin America.

On May 5, 2016, the U.S. National Highway Traffic Safety Administration (NHTSA) announced, jointly with the Takata company, a further extension of the recall for various models from different manufacturers containing certain airbags produced by the Takata company. Recalls were also ordered by the local authorities in individual countries. The recalls also included models manufactured by the Volkswagen Group. Appropriate provisions have been recognized. Currently, the possibility of further extensions to the recalls that could also affect Volkswagen Group models cannot be ruled out. It is not possible at the moment to provide further disclosures in accordance with IAS 37.86 in relation to this matter because the technical investigations and consultations with the authorities are still being carried out.

As permitted by IAS 37.92, in order not to prejudice the outcomes of the proceedings and the interests of the Company, we have not made any further disclosures about estimates in connection with the financial effects of, and disclosures about, uncertainty regarding the timing or amount of contingent liabilities in connection with the diesel issue and investigations by the European Commission. Further information can be found under the section entitled “Litigation”.

37. Litigation

In the course of their operating activities, Volkswagen AG and the companies in which it is directly or indirectly invested are involved in a great number of legal disputes and governmental proceedings in Germany and abroad. Such legal disputes and other proceedings occur in relation to employees, dealers, investors, customers, or suppliers, among others, or in relation to relevant public authorities. For the companies involved, these may result in payment or other obligations. In particular, substantial compensatory or punitive damages may have to be paid and cost-intensive measures may have to be implemented. In this context, specific quantification of the objectively likely consequences is often possible only to a very limited extent, if at all.

Risks may also emerge in connection with the adherence to regulatory requirements. This particularly applies in the case of regulatory vagueness that may be interpreted differently by Volkswagen and the authorities responsible for the respective regulations. In addition, legal risks can arise from the criminal activities of individual persons, which even the best compliance management system can never completely prevent.

Where transparent and economically viable, adequate insurance coverage was taken out for these risks. For the identifiable and measurable risks, provisions considered appropriate based on existing information were recognized and information about contingent liabilities disclosed. As some risks cannot be assessed or can only be assessed to a limited extent, the possibility of loss or damage not covered by the insured amounts and provisions cannot be ruled out. This applies particularly to legal risk assessment regarding the diesel issue.

Diesel issue

In the USA Volkswagen AG and certain affiliates reached settlement agreements (including various consent decrees) with the US Department of Justice (DOJ), the US Environmental Protection Agency (EPA), the State of California, the California Air Resources Board (CARB), the California Attorney General, the US Federal Trade Commission, and private plaintiffs represented by a Plaintiffs' Steering Committee in a multi- district litigation in California. These settlement agreements resolved certain civil claims made in relation to affected diesel vehicles in the United States of America.

Volkswagen AG also entered into agreements to resolve US federal criminal liability and certain civil penalties and claims relating to the diesel issue. As part of its plea agreement, Volkswagen AG agreed to plead guilty to three felony counts under US law – including conspiracy to commit fraud, obstruction of justice and using false statements to import cars into the United States of America – and has been sentenced to three years' probation.

A description of the diesel issue can be found starting on page 92. In connection with the diesel issue, potential consequences for Volkswagen's results of operations, financial position and net assets could emerge primarily in the following legal areas:

1. Coordination with the authorities on technical measures worldwide

In agreement with the respective responsible authorities, the Volkswagen Group is making technical measures available worldwide for virtually all diesel vehicles with type EA 189 engines.

Within its area of responsibility, the German Federal Motor Transport Authority (Kraftfahrt-Bundesamt or KBA) ascertained for all clusters (groups of vehicles) that implementation of the technical measures would not bring about any adverse changes in fuel consumption figures, CO_2 emission figures, engine power, maximum torque, and noise emissions.

AUDI AG has worked intensively for many months to check all relevant diesel concepts for possible discrepancies and retrofit potentials. The measures proposed by AUDI AG have been adopted and mandated in various recall notices issued by the KBA for vehicle models with V6 and V8 TDI engines.

Currently, AUDI AG assumes that the total cost, including the amount based on recalls, of the ongoing largely software-based retrofit program that began in July 2017 will be manageable and has recognized corresponding balance-sheet risk provisions. The measures submitted by AUDI AG are being examined by the KBA and can only be made available to customers after corresponding approval by the KBA.

The Ministry of Environment in South Korea qualified certain emissions strategies in the engine control software of various diesel vehicles with V6 or V8-TDI engines meeting the Euro 6 emission standard as an unlawful defeat device and ordered a recall on April 4, 2018; the same applies to the Dynamic Shift Program (DSP) in the transmission control of a number of Audi models.

In the USA, in fiscal year 2018, the EPA and CARB issued the outstanding official approvals needed for the technical solutions for the affected vehicles with 2.0 l TDI and with V6 3.0 l TDI engines. In the case of 2.0 l Generation 2 diesel vehicles with manual transmissions, Volkswagen Group of America, Inc. elected to withdraw the approved emissions modification proposal, whereby owners were given the option of a buyback and lessees were given the option of early lease termination.

On October 31, 2018, after discussions with DOJ, EPA, and CARB, the parties agreed to modify the First and Second Partial Consent Decrees to clarify that Volkswagen may repair certain technical issues with approved emissions modifications through an “AEM Correction” (Approved Emissions Modifications).

2. Criminal and administrative proceedings worldwide (excluding the USA/Canada)

Criminal investigations, regulatory offense proceedings, and/or administrative proceedings (in Germany for example by the Bundesanstalt für Finanzdienstleistungsaufsicht, BaFin – Federal Financial Supervisory Authority) have been opened in some countries. The public prosecutor’s offices in Braunschweig and Munich are investigating the core issues of the criminal investigations.

The Braunschweig Office of the Public Prosecutor is investigating approximately 40 (current and former) employees and a former member of the Board of Management for possible fraud, among other things. The investigations are ongoing. The defendants and Volkswagen AG were permitted to inspect the investigation files.

The regulatory offense proceeding that was opened against Volkswagen AG in this connection in April 2016 has been terminated by the administrative fine order issued against Volkswagen AG by the Braunschweig Office of the Public Prosecutor on June 13, 2018. The administrative fine order is based on a negligent breach in the Powertrain Development department of the obligation to supervise, relating to the period from mid-2007 to 2015 and a total of 10.7 million vehicles with diesel engines of types EA 189 worldwide and EA 288 (Generation 3) in the USA and Canada. The administrative order imposes a total fine of €1.0 billion, consisting of a penalty payment of €5 million and the forfeiture of economic benefits in the amount of €995 million. After thorough examination, the fine has been accepted and paid in full by Volkswagen AG, rendering the administrative fine order legally final. The administrative fine order terminates the regulatory offense proceeding against Volkswagen AG. Further sanctions against or forfeitures by Volkswagen AG and its Group companies are therefore not expected in Germany in connection with the unitary factual situation covered by the administrative order concerning diesel engines of types EA 189 worldwide and EA 288 (Generation 3) in the USA and Canada. As a result, Volkswagen expects that the conclusion of this proceeding will have a substantially positive impact on other governmental proceedings being conducted in Europe against Volkswagen AG and its Group companies.

The Braunschweig Office of the Public Prosecutor is conducting another proceeding against three (current or former) members of the Board of Management for alleged market manipulation with respect to capital market disclosure obligations in connection with the diesel issue. In this context, the Office of the Public Prosecutor has been conducting a regulatory offense proceeding against Volkswagen AG under § 30 OWiG (German Regulatory Offenses Act) since July 30, 2018. Volkswagen AG has since been permitted to inspect the public prosecutor's investigation files several times. The investigations are ongoing.

The Munich II Office of the Public Prosecutor is conducting investigations against 24 persons, including the former Chairman of the Board of Management of AUDI AG (who is also a former member of the Board of Management of Volkswagen AG) and another active member of the Board of Management of AUDI AG. The investigations are ongoing. AUDI AG has appointed two renowned major law firms to clarify the matters underlying the public prosecutor’s accusations. The Board of Management and Supervisory Board of AUDI AG are being regularly updated on the current state of affairs.

The administrative fine order issued on October 16, 2018 by the Munich II Office of the Public Prosecutor terminates the regulatory offense proceeding conducted against AUDI AG in this connection. The administrative fine order is based on a negligent breach of the obligation to supervise occurring in the organizational unit “Emissions Service/Engine Type Approval”. The administrative order imposes a total fine of €800 million, consisting of a penalty payment of €5 million and the forfeiture of economic benefits in the amount of €795 million. After thorough examination, the fine has been accepted and paid in full by AUDI AG, rendering the administrative fine order legally final. The administrative fine order terminates the regulatory offense proceeding against AUDI AG. Further sanctions against or forfeitures by AUDI AG are therefore not to be expected in Europe in connection with the unitary factual situation underlying the administrative fine order.

The Stuttgart Office of the Public Prosecutor has commenced a criminal investigation relating to the diesel issue against one board member, one employee, and one former employee of Dr. Ing. h.c. F. Porsche AG on suspicion of fraud and illegal advertising as well as an analogous regulatory offense proceeding against Dr. Ing. h.c. F. Porsche AG under § 30 OWiG. Dr. Ing. h.c. F. Porsche AG has appointed two renowned major law firms to clarify the matter underlying the public prosecutor’s accusations. The Board of Management and Supervisory Board of Dr. Ing. h.c. F. Porsche AG are being regularly updated on the current state of affairs.

On July 6, 2018, the Federal Constitutional Court rendered its decision on the constitutional complaints filed in connection with the search of the premises of the law firm Jones Day, holding that the lower court ruling affirming the provisional seizure of client engagement documents and data of Volkswagen AG did not violate constitutional law. The companies of the Volkswagen Group will continue to cooperate with the German government authorities with due regard for the ruling of the German Federal Constitutional Court.

Whether the criminal and administrative proceedings will ultimately result in fines for the Company, and if so in what amount, is currently subject to estimation risks. According to Volkswagen’s estimates so far, the likelihood that a sanction will be imposed is 50 % or less in the majority of these proceedings. Contingent liabilities have therefore been disclosed where the amount of such liabilities could be measured and the likelihood of a sanction being imposed was assessed at not lower than 10 %. Provisions were recognized to a small extent.

3. Product-related lawsuits worldwide (excluding the USA/Canada)

In principle, it is possible that customers in the affected markets will file civil lawsuits or that importers and dealers will assert recourse claims against Volkswagen AG and other Volkswagen Group companies. Besides individual lawsuits, various forms of collective actions (i.e. assertion of individual claims by plaintiffs acting jointly or as representatives of a class) are available in various jurisdictions. Furthermore, in a number of markets it is possible for consumer and/or environmental organizations to bring suit to enforce alleged rights to injunctive relief, declaratory judgment, or damages.

Customer class action lawsuits and actions brought by consumer and/or environmental associations are pending against Volkswagen AG and other companies of the Volkswagen Group in various countries including Argentina, Austria, Australia, Belgium, Brazil, Chile, China, the Czech Republic, Germany, Israel, Italy, Mexico, the Netherlands, Poland, Portugal, Spain, South Africa, South Korea, Switzerland, Taiwan, and the United Kingdom. Alleged rights to damages and other relief are asserted in these actions.

The actions pending in the aforementioned countries include in particular the following:

Various class action lawsuits with opt-out mechanism, one individual lawsuit, and two civil suits by the Australian Competition and Consumer Commission are currently pending in Australia against Volkswagen AG and other Group companies, including the Australian subsidiaries. These proceedings have been joined with each other. Given the opt-out rule, the class actions have the potential to automatically cover all vehicles with type EA 189 engines unless the right to opt out is actively exercised. In all, approximately 100 thousand vehicles in the Australian market with type EA 189 engines are affected. An initial court hearing lasting several weeks was held in March 2018 on technical questions; further issues are to be argued in September 2019.

In Belgium, the Belgian consumer organization Test Aankoop VZW has filed a class action to which an opt-out mechanism has been held to apply. The class action pertains to vehicles purchased by consumers on the Belgian market after September 1, 2014. The asserted claims are based on purported violations of unfair competition and consumer protection law as well as on alleged breach of contract. An initial hearing for oral argument has yet to take place in this matter. The court has extended the statutorily mandated negotiation phase until July 8, 2019.

In Brazil two class actions are pending. One of them pertains to approximately 17 thousand vehicles. In this proceeding, a judgment, which is not yet final, has been rendered holding Volkswagen do Brasil liable in an amount of €0.3 billion plus interest. The judgment has been appealed. In the second class action alleged compensation claims are made based on purported breaches of environmental regulations.

In Germany, the Verbraucherzentrale Bundesverband e. V. (Federation of Consumer Organizations) filed an action on November 1, 2018 with the Braunschweig Higher Regional Court for model declaratory judgment against Volkswagen AG. The complaint is seeking a ruling that certain preconditions for potential consumer claims against Volkswagen AG are met; however, no specific payment obligations would result from any determinations the court may make. Individual claims then would have to be enforced afterwards in subsequent separate proceedings.

In addition, various actions have been brought against companies of the Volkswagen Group in several German Regional Courts (Landgericht) by financialright GmbH, which is asserting rights assigned to it by a total of approximately 46 thousand customers in Germany, Slovenia, and Switzerland.

In England and Wales, suits filed in court by various law firms have been joined in a single collective action (group litigation). Roughly 117 thousand claimants joined the group litigation prior to expiration of the opt-in deadline on December 19, 2018; around 40 thousand additional plaintiffs not currently covered by the group litigation could still be added. Because of the opt-in mechanism, not all vehicles with type EA 189 engines are automatically covered by the group litigation; potential claimants must instead take action in order to join. A judicial case management conference is scheduled for March 2019. No oral argument on the substantive merits of the claims has as yet taken place.

In Italy, two class action lawsuits have been filed with the Venice Regional Court by two consumer associations (Altroconsumo and Codacons) acting on behalf of Italian customers. Damage claims based on alleged breach of contract as well as claims based on purported violations of Italian consumer protection law are being asserted in these proceedings. In the Codacons proceeding, the court dismissed the class action as inadmissible on December 18, 2018. In the Altroconsumo proceeding, the deadline for the filing of claims has passed and those filed are currently being tabulated by an appointed expert.

In the Netherlands, Stichting Volkswagen Car Claim has brought an opt-in class action seeking declaratory rulings. Any individual claims would then have to be reduced to judgment afterwards in a separate proceeding.

Several lawsuits filed by the Austrian consumer protection organization (VKI Verein für Konsumentenschutz) and by the Cobin Claims platform are pending in Austria. In these actions, damage claims assigned for collection to VKI or to the Cobin Claims platform are being asserted on behalf of roughly 10 thousand customers.

A Portuguese consumer organization has filed a class action with opt-out mechanism in Portugal. There are approximately 126 thousand affected vehicles in the Portuguese market. The complaint seeks vehicle return and alleges damages as well.

Volkswagen estimates the likelihood that the plaintiffs will prevail to be 50 % or less for the majority of the customer class actions and the complaints filed by consumer and/or environmental organizations. Contingent liabilities are disclosed for these proceedings where the amount of such liabilities can be measured and the chance that the plaintiff will prevail was assessed as not implausible. Since most of these proceedings are still in an early stage, it is in many cases not yet possible to quantify the realistic risk exposure. Provisions were recognized to a small extent.

Furthermore, individual lawsuits and similar proceedings are pending against Volkswagen AG and other Volkswagen Group companies in various countries, most of which are seeking damages or rescission of the purchase contract. In Germany, there are around 46 thousand such individual lawsuits. A total of approximately one thousand additional individual lawsuits are pending in other countries. According to Volkswagen's estimates, the likelihood that the plaintiffs will prevail is 50 % or less in the vast majority of the individual lawsuits. Contingent liabilities are disclosed for these actions where the amount of such liabilities can be measured and the chance that the plaintiff will prevail was assessed as not implausible. In addition, provisions were recognized to the extent necessary based on the current assessment.

At this time it cannot be estimated how many customers will choose to file lawsuits in the future in addition to those already pending given the action for model declaratory judgment in Germany, among other things, and what their prospect of success will be.

4. Lawsuits filed by investors worldwide (excluding the USA/Canada)

Investors from Germany and abroad have filed claims for damages against Volkswagen AG – in some cases along with Porsche Automobil Holding SE (Porsche SE) as joint and several debtors – based on purported losses due to alleged misconduct in capital market communications in connection with the diesel issue.

The vast majority of these investor lawsuits are currently pending at the Regional Court in Braunschweig. On August 5, 2016, the Regional Court in Braunschweig ordered that common questions of law and fact relevant to the lawsuits pending at the Regional Court in Braunschweig be referred to the Higher Regional Court (Oberlandesgericht) in Braunschweig for binding declaratory rulings pursuant to the German Act on Model Case Proceedings in Disputes Regarding Capital Market Information (Kapitalanleger-Musterverfahrensgesetz – KapMuG). In this proceeding, common questions of law and fact relevant to these actions are to be adjudicated in a consolidated manner by the Higher Regional Court in Braunschweig (model case proceedings). All lawsuits at the Regional Court in Braunschweig will be stayed pending resolution of the common issues, unless the cases can be dismissed for reasons independent of the common issues that are to be adjudicated in the model case proceedings. The resolution in the model case proceedings of the common questions of law and fact will be binding for all pending cases that have been stayed in the described manner. In the model case action, hearing for oral argument before the Braunschweig Higher Regional Court began on September 10, 2018 and was continued in subsequent sessions. Tracking the objects of declaratory judgment, the Court gave indications as to its preliminary assessment. Oral argument is to continue in 2019.

At the Regional Court in Stuttgart, further investor lawsuits have been filed against Volkswagen AG, in some cases along with Porsche SE as joint and several debtor. On December 6, 2017, the Regional Court in Stuttgart issued an order for reference to the Higher Regional Court in Stuttgart in relation to procedural issues, particularly for clarification of jurisdiction. An action for model declaratory judgment concerning the diesel issue is also pending against Porsche SE before the Stuttgart Higher Regional Court; as the case currently stands, Volkswagen AG is model case defendant in this action as well.

Further investor lawsuits have been filed at various courts in Germany and the Netherlands. In Austria, the first-instance dismissal of the last investor complaint pending in connection with the diesel issue became binding in the reporting period.

Worldwide (excluding USA and Canada), investor lawsuits, judicial applications for dunning procedures and conciliation proceedings, and claims under the KapMuG are currently pending against Volkswagen AG in connection with the diesel issue, with the claims totaling roughly €9.6 billion. Volkswagen AG remains of the opinion that it duly complied with its capital market obligations. Therefore, no provisions have been recognized for these investor lawsuits. Insofar as the chance of success was estimated at not lower than 10%, contingent liabilities have been disclosed.

5. Proceedings in the USA/Canada

Following the publication of the EPA's "Notices of Violation," Volkswagen AG and other Volkswagen Group companies have been the subject of intense scrutiny, ongoing investigations (civil and criminal), and civil litigation. Volkswagen AG and other Volkswagen Group companies have received subpoenas and inquiries from state attorneys general and other governmental authorities.

Volkswagen AG and other Volkswagen Group companies are facing litigation in the USA/Canada on a number of different fronts relating to the matters described in the EPA's "Notices of Violation". In that respect, investigations by various US and Canadian regulatory and government authorities are ongoing, particularly in areas relating to securities, financing and tax. Additionally, in the USA and Canada, certain putative class actions by customers, investors, salespersons and dealers; individual customers' lawsuits and claims by state, provincial or municipal authorities have been filed in various courts, including state and provincial courts. A large number of these putative class action lawsuits have been filed in US federal courts and consolidated for pretrial coordination purposes in the federal multidistrict litigation proceeding in the State of California.

In the USA, Volkswagen has reached separate agreements with the attorneys general of 49 states, the District of Columbia and Puerto Rico to resolve their existing or potential consumer protection and unfair trade practices claims in connection with both 2.0 l TDI and 3.0 l TDI vehicles in the USA. New Mexico still has consumer protection claims outstanding. Volkswagen has also reached separate agreements with the attorneys general of thirteen US states (California, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington) to resolve their existing or potential future claims for civil penalties and injunctive relief for alleged violations of environmental laws. The attorneys general of eight other US states (Alabama, Illinois, Montana, New Hampshire, New Mexico, Ohio, Tennessee, and Texas) and some municipalities have suits pending in state and federal courts against Volkswagen AG, Volkswagen Group of America, Inc. and certain affiliates, alleging violations of environmental laws. The environmental claims of eight states – Alabama, Illinois, Missouri, Minnesota, Ohio, Tennessee, Texas, and Wyoming – as well as Hillsborough County (Florida), Salt Lake County (Utah), and two Texas counties, have been dismissed in full or in part by trial or appellate courts as preempted by federal law. Alabama, Illinois, Ohio, Tennessee, Hillsborough County, and Salt Lake County have appealed or may still appeal the dismissal of their claims.

The U.S. Securities and Exchange Commission (the “SEC”) has requested information from Volkswagen regarding potential violations of securities laws in connection with issuances of bonds and asset-backed securities, as a result of nondisclosure of certain Volkswagen diesel vehicles' noncompliance with US emission standards. The SEC informed Volkswagen that it had issued a formal order of investigation in January 2017; this investigation is ongoing. The SEC Staff subsequently informed Volkswagen that the SEC might bring an enforcement action against Volkswagen arising out of this investigation.

On August 28, 2018, Volkswagen AG and a putative class of purchasers of Volkswagen AG American Depositary Receipts agreed to settle the class’ claims alleging a drop in price purportedly resulting from the matters described in the EPA’s “Notices of Violation” in exchange for a cash payment of USD 48 million. The proposed settlement was granted preliminary approval by the court in November 2018.

On December 21, 2017, Volkswagen announced an agreement in principle on a proposed consumer settlement in Canada involving 3.0 l diesel vehicles that was approved by the courts in Ontario and Quebec in April 2018. Also in Canada, a criminal enforcement-related investigation related to 2.0 l and 3.0 l diesel vehicles by the federal environmental regulator is ongoing, and a quasi-criminal enforcement-related offense has been charged by the Ontario provincial environmental regulator related to 2.0 l diesel vehicles. Additionally, in Quebec, a certified environmental class action on behalf of residents is pending. This environmental class action was authorized on the sole issue of whether punitive damages could be recovered. Volkswagen is seeking leave to appeal this authorization ruling. Class action and joinder lawsuits have also been filed in Canada, including alleged consumer protection and securities claims asserting damages among other things.

To the extent a matter is not separately described above, an assessment is not yet possible at the current stage of the proceedings or has, in accordance with IAS 37.92, not been presented so as not to compromise the results of the proceedings and the interests of the Company.

6. Additional proceedings

With its ruling of November 8, 2017, the Higher Regional Court of Celle ordered, upon the request of three US funds, the appointment of a special auditor for Volkswagen AG. The special auditor is to examine whether there was a breach of duties on the part of the members of the Board of Management and Supervisory Board of Volkswagen AG in connection with the diesel issue on or after June 22, 2006 and, if so, whether this resulted in damages for Volkswagen AG. The ruling by the Higher Regional Court of Celle is formally unappealable. However, Volkswagen AG has filed a constitutional complaint with the German Federal Constitutional Court alleging infringement of its constitutionally guaranteed rights. It is currently unclear when the German Federal Constitutional Court will reach a decision on this matter. Following the formally unappealable ruling from the Higher Regional Court of Celle, the special auditor appointed by the court indicated that he was not available to conduct the special audit on grounds of age. The US funds then applied to the Regional Court of Hanover to appoint another special auditor. Volkswagen AG is of the opinion that replacing the court-appointed special auditor in this manner is impermissible and has requested that the application for the appointment of a new special auditor be denied. A decision by the Regional Court of Hanover is expected in the course of 2019.

In addition, a second motion seeking appointment of a special auditor for Volkswagen AG to examine matters relating to the diesel issue has been filed with the Regional Court of Hanover. This proceeding has been suspended until the German Federal Constitutional Court renders its decision in the first special auditor litigation.

7. Risk assessment regarding the diesel issue
An amount of around €2.4 billion has been included in the provisions for litigation and legal risks as of December 31, 2018 to protect against the currently known legal risks related to the diesel issue based on existing information and current assessments. Insofar as these can be adequately measured at this stage, contingent liabilities relating to the diesel issue were disclosed in the notes in an aggregate amount of €5.4 billion (previous year: €4.3 billion), whereby approximately €3.4 billion (previous year: €3.4 billion) of this amount results from lawsuits filed by investors in Germany. The provisions recognized and the contingent liabilities disclosed as well as the other latent legal risks in the context of diesel issue are in part subject to substantial estimation risks given that the fact finding efforts have not yet been concluded, the complexity of the individual relevant factors and the ongoing coordination with the authorities. Should these legal or estimation risks materialize, this could result in further considerable financial charges.

In line with IAS 37.92, no further statements have been made concerning estimates of financial impact or about uncertainty regarding the amount or maturity of provisions and contingent liabilities in relation to the diesel issue. This is so as to not compromise the results of the proceedings or the interests of the Company.

Additional important legal cases

In 2011, ARFB Anlegerschutz UG (haftungsbeschränkt) brought an action against Volkswagen AG and Porsche SE for claims for damages for allegedly violating disclosure requirements under capital market law in connection with the acquisition of ordinary shares in Volkswagen AG by Porsche SE in 2008. The damages currently being sought based on allegedly assigned rights amounted to approximately €2.26 billion plus interest. In April 2016, the Regional Court in Hanover had formulated numerous objects of declaratory judgment that the cartel senate of the Higher Regional Court in Celle will decide on in model case proceedings under the KapMuG. In the first hearing on October 12, 2017, the Court already indicated that it currently does not see claims against Volkswagen AG as justified, both for want of sufficiently specific pleadings and for reasons of law. Volkswagen AG sees the statements of the court's senate as confirmation that the claims made against the Company have absolutely no basis.

At the time in question (2010/2011), other investors had also asserted claims – including claims against Volkswagen AG – arising out of the same circumstances in an approximate total amount of €4.6 billion and initiated conciliation proceedings. Volkswagen AG always refused to participate in these conciliation proceedings; since then, these claims have not been pursued further.

In June 2013, the Annual General Meeting of MAN SE approved the conclusion of a control and profit and loss transfer agreement between MAN SE and TRATON SE (at that time Truck & Bus GmbH), a subsidiary of Volkswagen AG. In July 2013, an award proceeding was instituted to review the appropriateness of the cash settlement set out in the agreement in accordance with § 305 of the Aktiengesetz (AktG – German Stock Corporation Act) and the cash compensation in accordance with § 304 of the AktG. By ruling of June 26, 2018 (supplemented and amended by the rulings of July 30, 2018 and December 17, 2018), the Munich Higher Regional Court rendered a final decision increasing the annual compensation claim under § 304 AktG to €5.47 gross per share (less any corporate income tax and any solidarity surcharge at the respective tax rate applicable to these taxes for the financial year in question). The cash settlement in the amount of €90.29 per share, increased in the first instance by the Munich I Regional Court, was affirmed. The decisions by the Munich Higher Regional Court are final and were published in the German Federal Gazette on August 6, 2018 and January 10, 2019.

In Brazil, the Brazilian tax authorities commenced tax proceedings against MAN Latin America; at issue in these proceedings are the tax consequences of the acquisition structure chosen for MAN Latin America in 2009. In December 2017, a second instance judgment that was negative for MAN Latin America was rendered in administrative court proceedings. MAN Latin America initiated proceedings against this judgment before the regular court in 2018. Due to the difference in the penalties plus interest which could potentially apply under Brazilian law, the estimated size of the risk in the event that the tax authorities are able to prevail overall with their view is laden with uncertainty. However, a positive outcome continues to be expected for MAN Latin America. Should the opposite occur, this could result in a risk of about €0.7 billion for the contested period from 2009 onwards, which has been stated within the contingent liabilities in the notes.

In 2011, the European Commission conducted searches at European truck manufacturers on suspicion of an unlawful exchange of information during the period 1997–2011 and issued a statement of objections to MAN, Scania and the other truck manufacturers concerned in November 2014. With its settlement decision in July 2016, the European Commission fined five European truck manufacturers. MAN's fine was waived in full as the company had informed the European Commission about the irregularities as a key witness.

In September 2017, the European Commission fined Scania €0.88 billion. Scania has appealed to the European Court of Justice in Luxembourg and will use all means at its disposal to defend itself. Scania had already recognized a provision of €0.4 billion in 2016.

Furthermore, antitrust lawsuits for damages from customers were received. As is the case in any antitrust proceedings, this may result in further lawsuits for damages. Neither provisions nor contingent liabilities were stated because the early stage of proceedings makes an assessment currently impossible.

As part of the cartel investigations in the automotive industry already known to the public, the European Commission took the procedural step of initiating formal proceedings against affected undertakings on September 18, 2018. The investigations have been ongoing for some time. As the European Commission's press statement indicates, the European Commission is now restricting the scope of the investigation to the subject of emissions. The formal initiation of proceedings is standard and is a purely procedural step in the process, which was expected by Volkswagen. The Volkswagen Group and the relevant Group brands have been cooperating fully with the European Commission and will continue to cooperate.

In addition, the Italian Competition Authority initiated proceedings to investigate potential competition law infringements (alleged exchange of competitively sensitive information) by a number of captive automotive finance companies, including Volkswagen Bank GmbH. The proceedings were later extended to the relevant parent companies, including Volkswagen AG. In October 2018, Volkswagen Bank GmbH and Volkswagen AG received a statement of objections summarizing the findings by the authority and describing the alleged infringement. Volkswagen AG and Volkswagen Bank GmbH transmitted their respective replies to the Italian Competition Authority in November 2018. In January 2019, the Italian Competition Authority imposed a fine of €163 million against Volkswagen AG and Volkswagen Bank GmbH. Provisions were recognized by Volkswagen Bank GmbH. Volkswagen AG and Volkswagen Bank GmbH intend to appeal this decision. Lawsuits seeking damages are possible in this proceeding as well.

In 2017, plaintiffs filed numerous complaints in various US jurisdictions on behalf of putative classes of purchasers of German luxury vehicles against several automobile manufacturers, including Volkswagen AG and other Group companies, that are now pending in two consolidated class actions in the multidistrict litigation in the State of California. The complaints allege that since the 1990s, defendants engaged in a conspiracy to unlawfully increase the prices of German luxury vehicles in violation of US antitrust and consumer protection law. Plaintiffs in Canada filed claims with similar allegations on behalf of putative classes of purchasers of German luxury vehicles against several automobile manufacturers, including Volkswagen Canada Inc., Audi Canada Inc., and other Group companies. Neither provisions nor contingent liabilities were stated because the early stage of proceedings makes an assessment currently impossible.

In addition, a few national and international authorities have initiated antitrust investigations. Volkswagen is cooperating closely with the responsible authorities in these investigations. An assessment of the underlying situation is not possible at this early stage.

For certain T6 models (M1 class) with Euro 6 diesel engines registered as passenger cars, the inspection regarding the conformity of the current production of new vehicles with the approved type (conformity of production) identified that certain technical data could not be fully confirmed. To ensure this conformity of production for new vehicles, Volkswagen AG developed a software measure, which was approved by the KBA at the end of February 2018 and was applied to newly produced vehicles as well as to new vehicles (approximately 30 thousand in all) that had not been delivered by then. Volkswagen AG also conducted in-use tests (tests to verify the conformity of vehicles in use to their type approval) to determine whether the roughly 200 thousand T6 used vehicles already on the market conform to the technical data. The tests carried out on the proposal of Volkswagen AG were taking place in close collaboration with the KBA, which included this process in a decision dated March 1, 2018. Following further tests in August 2018, at the proposal of Volkswagen AG and in accordance with this decision, there is also a software measure for used T6 vehicles to ensure conformity with the approved vehicle type.

Since November 2016, Volkswagen has been responding to information requests from the EPA and CARB related to automatic transmissions in certain vehicles with gasoline engines.

Additionally, putative class actions filed against Audi AG and certain affiliates have been transferred to the federal multidistrict litigation proceeding in the State of California and consolidated. The lawsuits allege that defendants concealed the existence of defeat devices in Audi brand vehicles with automatic transmissions. Other actions alleging similar claims are also pending in the Northern District of California and two provincial courts in Canada.

In the summer of 2017, plaintiffs filed a complaint, on behalf of a putative class of purchasers of Volkswagen AG's American Depositary Receipts, against Volkswagen AG and against three former and one current member of Volkswagen AG's Board of Management, in the US District Court for the Eastern District of New York. On July 13, 2018, plaintiffs filed an amended complaint, which defendants moved to dismiss. Plaintiffs assert securities claims alleging that defendants made material misstatements and omissions concerning Volkswagen AG's compliance measures, in particular those relating to competition and antitrust law as well as allegations in an antitrust litigation against Volkswagen AG in the Northern District of California. Defendants believe that the alleged claims are without merit.

Provisions were recognized by Volkswagen Bank GmbH and Volkswagen Leasing GmbH for possible claims in connection with financial services provided to consumers.

In addition, various proceedings are pending worldwide, particularly in the USA, in which customers are asserting purported claims either individually or in class actions. These claims are as a rule based on alleged vehicle defects, including defects alleged in vehicle parts supplied to the Volkswagen Group (for instance, in the Takata case).

Risks may also result from patent infringement actions, particularly in Germany and the USA. These actions seeking injunctive relief and damages pertain among other things to patents for semiconductor technology used in vehicles.

In line with IAS 37.92, no further statements have been made concerning estimates of financial impact or about uncertainty regarding the amount or maturity of provisions and contingent liabilities in relation to additional important legal cases. This is so as to not compromise the results of the proceedings or the interests of the Company.

38. Other financial obligations

€ million	PAYABLE 2018	PAYABLE 2019 – 2022	PAYABLE from 2023	TOTAL Dec. 31, 2017
Purchase commitments in respect of				
property, plant and equipment	7,347	1,394	–	8,740
intangible assets	946	479	–	1,425
investment property	41	–	–	41
Obligations from				
loan commitments to unconsolidated subsidiaries	186	21	–	207
irrevocable credit commitments to customers[1]	2,655	0	44	2,699
long-term leasing and rental contracts	1,026	2,389	2,133	5,548
Miscellaneous other financial obligations	2,476	1,469	929	4,874

1 Prior-year figures adjusted.

€ million	PAYABLE 2019	PAYABLE 2020 – 2023	PAYABLE from 2024	TOTAL Dec. 31, 2018
Purchase commitments in respect of				
property, plant and equipment	8,362	1,621	0	9,983
intangible assets	1,022	85	–	1,107
investment property	39	–	–	39
Obligations from				
loan commitments to unconsolidated subsidiaries	326	–	–	326
irrevocable credit commitments to customers	3,010	70	5	3,085
long-term leasing and rental contracts	1,190	2,847	2,334	6,372
Miscellaneous other financial obligations	2,971	1,762	966	5,699

As part of the implementation of IFRS 9, obligations under irrevocable credit commitments to customers were analyzed. This led to an adjustment of the data applied. The prior-year figures were adjusted in the amount of €–997 million.

Other financial obligations from long-term leasing and rental contracts are partly offset by expected income from subleases of €1,535 million (previous year: €1,467 million).

Other financial obligations include an amount of €1.3 billion for investments to which the Group has committed itself, in the infrastructure for zero-emission vehicles and in initiatives to promote access to and awareness of these technologies. These commitments were made as part of the settlement agreements in the USA in connection with the diesel issue.

39. Total audit fees of the Group auditor

Under the provisions of the Handelsgesetzbuch (HGB – German Commercial Code), Volkswagen AG is obliged to disclose the total audit fee of the Group auditor, PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft.

€ million	2018	2017
Financial statement audit services	20	17
Other assurance services	6	2
Tax advisory services	1	1
Other services	26	13
	52	**33**

The financial statement audit services were attributable to the audit of the consolidated financial statements of Volkswagen AG and of annual financial statements of German Group companies as well as to reviews of the interim consolidated financial statements of Volkswagen AG and of interim financial statements of German Group companies. The auditors provided assurance services and tax advice only to a small extent. Other services provided by the auditors in the reporting period focused on advice on how to implement new legal standards and on support for measures in connection with the diesel issue.

40. Personnel expenses

€ million	2018	2017
Wages and salaries	33,368	31,432
Social security, post-employment and other employee benefit costs	7,791	7,518
	41,158	**38,950**

41. Average number of employees during the year

	2018	2017
Performance-related wage-earners	256,684	253,469
Salaried staff	302,554	288,478
	559,238	**541,947**
of which in the passive phase of partial retirement	(8,791)	(7,156)
Vocational trainees	17,905	17,891
	577,143	**559,838**
Employees of Chinese joint ventures	78,579	74,558
	655,722	**634,396**

42. Events after the balance sheet date

There were no events with a significant effect on net assets, financial position and results of operations after the end of fiscal year 2018.

43. Remuneration based on performance shares and phantom shares (share-based payment)

At the beginning of 2017, the Supervisory Board of Volkswagen AG resolved to adjust the remuneration system of the Board of Management with effect from January 1, 2017. The remuneration system of the Board of Management comprises non-performance-related and performance-related components. The performance-related remuneration consists of a performance-related annual bonus with a one-year assessment period and a long-term incentive (LTI) in the form of a performance share plan with a forward-looking three-year term (share-based payment). In addition, a bonus was converted into phantom preferred shares (phantom shares) in 2016.

The group of beneficiaries of the performance share plan was expanded at the end of 2018 by including members of top management. At the beginning of 2019, they will be granted performance shares for the first time for the 2019-2021 performance period. The way the performance shares allocated to them work is essentially the same as the performance shares allocated to members of the Board of Management.

PERFORMANCE SHARES

Each performance period of the performance share plan has a term of three years. At the time the LTI is granted, the annual target amount under the LTI is converted, on the basis of the initial reference price of Volkswagen's preferred shares, into performance shares of Volkswagen AG, which are allocated to the respective beneficiary as a pure calculation position. After the end of the three-year term of the performance share plan, a cash settlement shall take place. The payment amount corresponds to the number of determined performance shares, multiplied by the closing reference price at the end of the three-year period plus a dividend equivalent for the relevant term. The payment amount under the performance share plan is limited to 200% of the target amount. If 100% of the targets agreed in each case are achieved, the target amount is €1.8 million for each member of the Board of Management and €3.8 million for the Chairman of the Board of Management. A total of 276,382 performance shares were allocated to the members of the Board of Management.

The total target amounts of the members of the top management tier for the 2019-2021 performance period came to €95.2 million on aggregate.

The fair value of the obligation arising from the performance shares amounted to €48.4 million as of December 31, 2018 (previous year: €43.8 million). The compensation cost of €18.2 million (previous year: €43.8 million) was recognized under personnel costs. If the beneficiaries of the performance share plan had left the Company as of December 31, 2018, the obligation (intrinsic value) would have amounted to a total of €33.7 million (previous year: €20.3 million).

PHANTOM SHARES

At its meeting on April 22, 2016, Volkswagen AG's Supervisory Board accepted the offer made by the members of the Board of Management to withhold 30% of the variable remuneration for fiscal year 2015 for the Board of Management members active on the date of the resolution and to make its disposal subject to future share price performance by means of phantom shares. The amount withheld led to the creation of 50,703 phantom preferred shares. The fair value of the obligation to current and former members of the Board of Management amounted to €5.0 million as of December 31, 2018 (previous year: €7.0 million). In 2018, Mr. Stadler received a cash payment of the value of 8,633 shares in an amount of €1.0 million as part of the termination of his contract of service. The decrease in the fair value of all phantom shares by €1.0 million (previous year: increase in fair value by €2.0 million) was recognized as income (previous year: expense). If the other members of the Board of Management had also left the Company as of December 31, 2018, the obligation (intrinsic value) would have amounted to a total of €5.3 million (previous year: €7.3 million). For further details on performance shares and phantom shares, please refer to our disclosures in the remuneration report, which is part of the Group management report.

44. Related party disclosures in accordance with IAS 24

Related parties as defined by IAS 24 are natural persons and entities that Volkswagen AG has the ability to control or on which it can exercise significant influence, or natural persons and entities that have the ability to control or exercise significant influence on Volkswagen AG, or that are influenced by another related party of Volkswagen AG.

All transactions with related parties are conducted on an arm's length basis.

At 52.2%, Porsche SE held the majority of the voting rights in Volkswagen AG as of the reporting date. The creation of rights of appointment for the State of Lower Saxony was resolved at the Extraordinary General Meeting of Volkswagen AG on December 3, 2009. As a result, Porsche SE cannot appoint the majority of the members of Volkswagen AG's Supervisory Board for as long as the State of Lower Saxony holds at least 15% of Volkswagen AG's ordinary shares. However, Porsche SE has the power to participate in the operating policy decisions of the Volkswagen Group and is therefore classified as a related party as defined by IAS 24.

The contribution of Porsche SE's holding company operating business to Volkswagen AG on August 1, 2012 has the following effects on the agreements between Porsche SE, Volkswagen AG and companies of the Porsche Holding Stuttgart Group that existed prior to the contribution and were entered into on the basis of the Comprehensive Agreement and its related implementation agreements:

> As part of the contribution of Porsche SE's holding company operating business to Volkswagen AG, Volkswagen AG undertook to assume standard market liability compensation effective August 1, 2012 for guarantees issued to external creditors, whereby it is indemnified internally.
> Volkswagen AG continues to indemnify Porsche SE internally against claims by the Einlagensicherungsfonds (German deposit protection fund) after Porsche SE submitted an indemnification agreement required by the Bundesverband Deutscher Banken (Association of German Banks) to the Einlagensicherungsfonds in August 2009. Volkswagen AG has also undertaken to indemnify the Einlagensicherungsfonds against any losses caused by measures taken by the latter in favor of a bank in which Volkswagen AG holds a majority interest.
> Under certain conditions, Porsche SE continues to indemnify Porsche Holding Stuttgart, Porsche AG and their legal predecessors against tax disadvantages that exceed the obligations recognized in the financial statements of those companies relating to periods up to and including July 31, 2009. In return, Volkswagen AG has undertaken to reimburse Porsche SE for any tax advantages of Porsche Holding Stuttgart, Porsche AG and their legal predecessors and subsidiaries relating to tax assessment periods up to July 31, 2009. Based on the results of the external tax audit for the assessment periods 2006 to 2008, which has now been completed, and based on information for the 2009 assessment period available at the date of preparing these consolidated financial

statements, a compensation obligation in the low triple-digit million euro range would arise for Volkswagen AG. New information emerging in the future from the external tax audit that commenced at the end of 2015 for the 2009 assessment period could result in an increase or decrease in the potential compensation obligation.

Under the terms of the Comprehensive Agreement, Porsche SE and Volkswagen AG had granted each other put and call options with regard to the remaining 50.1% interest in Porsche Holding Stuttgart held by Porsche SE until the contribution of its holding company operating business to Volkswagen AG. Both Volkswagen AG (if it had exercised its call option) and Porsche SE (if it had exercised its put option) had undertaken to bear the tax burden resulting from the exercise of the options and any subsequent activities in relation to the equity investment in Porsche Holding Stuttgart (e.g. from recapture taxation on the spin-off in 2007 and/or 2009). If tax benefits had accrued to Volkswagen AG, Porsche Holding Stuttgart, Porsche AG, or their respective subsidiaries as a result of recapture taxation on the spin-off in 2007 and/or 2009, the purchase price to be paid by Volkswagen AG for the transfer of the outstanding 50.1% equity investment in Porsche Holding Stuttgart if the put option had been exercised by Porsche SE would have been increased by the present value of the tax benefit. This arrangement was taken over under the terms of the contribution agreement to the effect that Porsche SE has a claim against Volkswagen AG for payment in the amount of the present value of the realizable tax benefits from any recapture taxation of the spin-off in 2007 as a result of the contribution. It was also agreed under the terms of the contribution that Porsche SE will indemnify Volkswagen AG, Porsche Holding Stuttgart and their subsidiaries against taxes if measures taken by or not taken by Porsche SE result in recapture taxation for 2012 at these companies in the course of or following implementation of the contribution. In this case, too, Porsche SE is entitled to assert a claim for payment against Volkswagen AG in the amount of the present value of the realizable tax benefits that arise at the level of Volkswagen AG or one of its subsidiaries as a result of such a transaction.

Further agreements were entered into and declarations were issued in connection with the contribution of Porsche SE's holding company operating business to Volkswagen AG, in particular:

- Porsche SE indemnifies its contributed subsidiaries, Porsche Holding Stuttgart, Porsche AG and their subsidiaries against certain liabilities to Porsche SE that relate to the period up to and including December 31, 2011 and that exceed the obligations recognized in the financial statements of those companies for that period.
- Porsche SE indemnifies Porsche Holding Stuttgart and Porsche AG against obligations arising from certain legal disputes; this includes the costs of an appropriate legal defense.
- Moreover, Porsche SE indemnifies Volkswagen AG, Porsche Holding Stuttgart, Porsche AG and their subsidiaries against half of the taxes (other than taxes on income) arising at those companies in conjunction with the contribution that would not have been incurred in the event of the exercise of the call option on the shares of Porsche Holding Stuttgart that continued to be held by Porsche SE until the contribution. Volkswagen AG therefore indemnifies Porsche SE against half of such taxes that it incurs. In addition, Porsche Holding Stuttgart is indemnified against half of the land transfer tax and other costs triggered by the merger.
- Additionally, Porsche SE and Porsche AG agreed to allocate any subsequent VAT receivables or liabilities from transactions in the period up to December 31, 2009 to the company entitled to the receivable or incurring the liability.
- A range of information, conduct and cooperation obligations were agreed by Porsche SE and the Volkswagen Group.

According to a notification dated January 8, 2019, the State of Lower Saxony and Hannoversche Beteiligungsgesellschaft Niedersachsen mbH, Hanover, held 20.00% of the voting rights of Volkswagen AG on December 31, 2018. As mentioned above, the General Meeting of Volkswagen AG on December 3, 2009 also resolved that the State of Lower Saxony may appoint two members of the Supervisory Board (right of appointment).

The following tables present the amounts of supplies and services transacted, as well as outstanding receivables and liabilities, between consolidated companies of the Volkswagen Group and related parties:

RELATED PARTIES

€ million	SUPPLIES AND SERVICES RENDERED 2018	SUPPLIES AND SERVICES RENDERED 2017	SUPPLIES AND SERVICES RECEIVED 2018	SUPPLIES AND SERVICES RECEIVED 2017
Porsche SE and its majority interests	3	7	3	1
Supervisory Board members	4	2	2	2
Board of Management members	0	0	0	0
Unconsolidated subsidiaries	1,137	1,039	1,649	1,300
Joint ventures and their majority interests	16,724	14,294	491	1,225
Associates and their majority interests	194	214	1,267	733
Pension plans	1	1	2	0
Other related parties	0	0	1	0
State of Lower Saxony, its majority interests and joint ventures	10	11	8	9

€ million	RECEIVABLES FROM Dec. 31, 2018	RECEIVABLES FROM Dec. 31, 2017	LIABILITIES (INCLUDING OBLIGATIONS) TO Dec. 31, 2018	LIABILITIES (INCLUDING OBLIGATIONS) TO Dec. 31, 2017
Porsche SE and its majority interests	4	13	1	0
Supervisory Board members	0	0	205	254
Board of Management members	0	0	78	72
Unconsolidated subsidiaries	1,319	1,480	1,869	1,773
Joint ventures and their majority interests	11,989	9,889	2,671	2,168
Associates and their majority interests	112	76	487	572
Pension plans	1	1	–	–
Other related parties	–	–	100	63
State of Lower Saxony, its majority interests and joint ventures	1	2	2	1

The tables above do not contain the dividend payments of €3,493 million (previous year: €3,653 million) received from joint ventures and associates and dividends of €601 million (previous year: €308 million) paid to Porsche SE.

Receivables from joint ventures are primarily attributable to loans granted in an amount of €7,606 million (previous year: €6,277 million) as well as trade receivables in an amount of €4,045 million (previous year: €3,354 million). Receivables from non-consolidated subsidiaries also result primarily from loans granted in an amount of €741 million (previous year: €1,038 million) as well as trade receivables in an amount of €214 million (previous year: €224 million).

Impairment losses of €56 million (previous year: €56 million) were recognized on the outstanding related party receivables. In fiscal year 2018, expenses of €29 million (previous year: €36 million) were incurred in this context.

In addition, the Volkswagen Group has furnished guarantees to external banks on behalf of related parties in the amount of €239 million (previous year: €220 million).

In the reporting period, the Volkswagen Group made capital contributions of €298 million (previous year: €203 million) to related parties.

The changes in supplies and services rendered to joint ventures and their majority interests are primarily attributable to deliveries to the Chinese joint ventures.

As in the previous year, obligations to members of the Supervisory Board relate primarily to interest-bearing bank balances of Supervisory Board members that were invested at standard market terms and conditions at Volkswagen Group companies.

Obligations to the Board of Management comprise outstanding balances for the annual bonus and the fair values of the performance shares and phantom shares in the amount of €64.8 million (previous year: €67.0 million) granted to Board of Management members.

In addition to the amounts shown above, the following expenses were recognized for the members of the Board of Management and Supervisory Board of the Volkswagen Group in the course of their activities as members of these bodies:

€	2018	2017
Short-term benefits	32,417,428	33,967,996
Benefits based on performance shares and phantom shares	10,022,492	45,777,248
Post-employment benefits	10,519,369	10,872,088
Termination benefits	12,994,964	6,940,142
	65,954,253	**97,557,473**

Benefits paid on the basis of performance shares include the cost of €10.6 million (previous year: €43.8 million) attributable to the performance shares granted to Board of Management members under the remuneration system applicable as from 2017. Pursuant to the guidance of IFRS 2, this requires inclusion of not only the performance share plan for 2017 and 2018, but also of a pro-rated amount for future share plans to be granted during the current employment contract.

In fiscal year 2018, the share price performance led to the recognition of income of €0.6 million (previous year: expense of €2.0 million) for the phantom shares.

The employee representatives and the representative of the senior executives on the Supervisory Board are also entitled to a regular salary as set out in their employment contracts. For members of German works councils, this is based on the provisions of the Betriebsverfassungsgesetz (BetrVG – German Works Constitution Act). Investigations by the authorities are currently under way to determine whether the remuneration of some works council members can be justified. As a precaution, components of the remuneration of some works council members has been retained in this context until the matter is clarified. Volkswagen AG currently assumes that the proceedings will be completed in fiscal year 2019.

The post-employment benefits relate to additions to pension provisions for current members of the Board of Management. The termination benefits relate to the severance payment made to Mr. Garcia Sanz and Mr. Stadler in connection with their early departure from the Board of Management. The payment of a potential severance payment to Mr. Stadler depends on the development and outcome of the criminal proceedings.

Disclosures on the pension provisions for members of the Board of Management and more detailed explanations of the remuneration of the Board of Management and the Supervisory Board can be found in the section entitled “Remuneration of the Board of Management and the Supervisory Board” and in the remuneration report, which is part of the management report.

45. German Corporate Governance Code

On November 16, 2018, the Board of Management and Supervisory Board of Volkswagen AG issued their declaration of conformity with the German Corporate Governance Code as required by section 161 of the Aktiengesetz (AktG – German Stock Corporation Act) and made it permanently available to the shareholders of Volkswagen AG on the Company's website at www.volkswagenag.com/en/InvestorRelations/corporate-governance/declaration-of-conformity.html.

On November 29, 2018, the Board of Management and Supervisory Board of AUDI AG likewise issued their declaration of conformity with the German Corporate Governance Code and made it permanently available to the shareholders at www.audi.com/cgk-declaration.

In December 2018, the Executive Board and Supervisory Board of MAN SE issued their declaration of conformity with the German Corporate Governance Code as required by section 161 of the AktG and made it permanently available to the shareholders at www.corporate.man.eu/en/investor-relations/corporate-governance/corporate-governance-at-man/Corporate-Governance-at-MAN.html.

The Executive and Supervisory Boards of RENK AG issued a declaration of conformity in December, 2018 and made it permanently available to the shareholders at www.renk-ag.com/en/investor-relations/financial-reports.

46. Remuneration of the Board of Management and the Supervisory Board

€	2018	2017
Board of Management remuneration		
Non-performance-related remuneration	13,051,264	14,337,116
Performance-related remuneration	14,827,178	15,844,041
Long-term incentive component	22,457,869	20,104,770
	50,336,310	**50,285,927**
Supervisory Board remuneration		
Non-performance-related remuneration	4,004,372	3,516,389
Performance-related remuneration	534,614	270,450
	4,538,986	**3,786,839**

NON-PERFORMANCE-RELATED REMUNERATION OF THE BOARD OF MANAGEMENT

The non-performance-related remuneration of the Board of Management comprises fixed remuneration and fringe benefits. Since 2018, appointments assumed at Group companies have not been remunerated separately; instead they are deemed to be included in the remuneration. The fringe benefits relate to noncash benefits granted and include in particular the use of operating assets such as company cars and the payment of insurance premiums. Taxes due on these noncash benefits were mainly borne by Volkswagen AG.

PERFORMANCE-RELATED REMUNERATION AND LONG-TERM INCENTIVE COMPONENT OF THE BOARD OF MANAGEMENT

Performance-related remuneration includes the annual bonus with a one-year assessment period. The long-term incentive component contains the long-term incentive (LTI) in the form of a performance share plan with a forward-looking three-year term. The performance shares granted to the incumbent members of the Board of Management under the remuneration system in 2018 (134,956 performance shares) had a fair value of €22.5 million (previous year: €20.1 million) at the grant date; this amount represents remuneration under German GAAP.

At its meeting on April 22, 2016, Volkswagen AG's Supervisory Board accepted the offer made by the members of the Board of Management to withhold 30% of the variable remuneration for fiscal year 2015 for the Board of Management members active on the date of the resolution and to make its disposal subject to future share price performance by means of phantom shares. The resulting effects on remuneration were reported as appropriate in previous years.

In fiscal year 2018, expenses totaling €10.6 million (previous year: €43.8 million) were recognized for the performance shares, while income for the phantom shares totaled €0.6 million (previous year: expense of €2.0 million). They do not represent remuneration under German GAAP and are therefore not included in the tables above.

As in the previous year, no interest-free advances were paid to members of the Board of Management.

SUPERVISORY BOARD REMUNERATION

As a result of its regular review of the Supervisory Board remuneration, the Supervisory Board proposed a reorganization of the system of Supervisory Board remuneration to the 2017 Annual General Meeting, which was approved on May 10, 2017 with 99.98 % of the votes cast. The remuneration of the members of the Supervisory Board of Volkswagen AG then no longer contains any performance-related remuneration components but consists entirely of non-performance-related remuneration components. Remuneration for supervisory board work at subsidiaries continues to comprise a mix of non-performance-related and performance-related components.

PENSION ENTITLEMENTS

On December 31, 2018, the pension provisions for members of the Board of Management amounted to €55.8 million (previous year: €125.4 million). Current pensions are index-linked in accordance with the index-linking of the highest collectively agreed salary insofar as the application of section 16 of the Gesetz zur Verbesserung der betrieblichen Altersversorgung (BetrAVG – German Company Pension Act) does not lead to a higher increase.

In connection with their departure from the Board of Management Mr. Blessing, Mr. Garcia Sanz, Mr. Müller and Mr. Stadler were promised the following amounts:

For Mr. Blessing

- a non-performance-related component of €3.8 million,
- a performance-related component of €4.2 million and
- a long-term incentive component of €3.9 million were recognized.

For Mr. Garcia Sanz

- a non-performance-related component of €1.6 million,
- a performance-related component of €1.8 million and
- a long-term incentive component of €1.6 million were recognized.

For Mr. Müller

- a non-performance-related component of €4.0 million,
- a performance-related component of €6.6 million and
- a long-term incentive component of €7.2 million were recognized.

For Mr. Stadler

- a non-performance-related component of €3.2 million,
- a performance-related component of €1.9 million and
- a long-term incentive component of €1.8 million were recognized.

The payment of the amounts mentioned above for Mr. Stadler is linked to the development and outcome of the criminal proceedings. For the amounts promised, in general, Volkswagen AG and AUDI AG are jointly and severally liable.

For former members of the Board of Management and their surviving dependents €44.0 million (previous year: €19.9 million) were granted. Pension provisions in accordance with IFRSs for this group of individuals amounted to €324.0 million (previous year: €269.0 million).

The individual remuneration of the members of the Board of Management and the Supervisory Board is explained in the remuneration report in the management report on page 68. A comprehensive assessment of the individual remuneration components, including the LTI, in the form of the performance share plan can also be found there.