

Balance sheet disclosures

12. Intangible assets

CHANGES IN INTANGIBLE ASSETS IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2019

€ 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, 2019	16,952	23,318	7,215	32,020	8,992	88,496
Foreign exchange differences	-18	-57	33	77	12	46
Changes in consolidated Group	5	17	-	-	234	256
Additions	-	-	3,251	1,920	770	5,940
Transfers	-	-	-4,301	4,299	54	52
Classified as held for sale	61	15	-	-	47	122
Disposals	-	16	8	1,421	126	1,571
Balance at Dec. 31, 2019	16,878	23,247	6,188	36,895	9,889	93,098
Amortization and impairment						
Balance at Jan. 1, 2019	84	1	42	16,768	6,989	23,883
Foreign exchange differences	0	-	0	45	6	51
Changes in consolidated Group	-	-	-	-	147	147
Additions to cumulative amortization	3	-	-	4,049	680	4,731
Additions to cumulative impairment losses	-	15	7	8	4	34
Transfers	-	-	-1	1	2	2
Classified as held for sale	0	-	-	-	12	12
Disposals	-	16	-	1,422	114	1,551
Reversal of impairment losses	-	-	3	396	3	402
Balance at Dec. 31, 2019	86	-	45	19,053	7,700	26,884
Carrying amount at Dec. 31, 2019	16,793	23,247	6,143	17,842	2,189	66,214

CHANGES IN INTANGIBLE ASSETS IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2020

€ 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, 2020	16,878	23,247	6,188	36,895	9,889	93,098
Foreign exchange differences	33	77	-77	-299	-281	-548
Changes in consolidated Group	-	31	8	15	56	111
Additions	-	-	4,576	1,897	1,038	7,511
Transfers	-	-	-4,150	4,150	-58	-58
Disposals	-	37	107	1,341	310	1,795
Balance at Dec. 31, 2020	16,911	23,318	6,438	41,316	10,334	98,317
Amortization and impairment						
Balance at Jan. 1, 2020	86	-	45	19,053	7,700	26,884
Foreign exchange differences	-5	-	0	-172	-232	-409
Changes in consolidated Group	-	-	-	-	9	9
Additions to cumulative amortization	3	-	-	4,514	733	5,249
Additions to cumulative impairment losses	-	37	55	75	62	229
Transfers	-	-	-6	7	0	1
Disposals	-	37	-	1,344	226	1,606
Reversal of impairment losses	-	-	7	-	0	7
Balance at Dec. 31, 2020	83	-	87	22,133	8,046	30,349
Carrying amount at Dec. 31, 2020	16,828	23,318	6,351	19,183	2,288	67,968

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	2020	2019
Brand names by operating segment		
Porsche	13,823	13,823
Scania Vehicles and Services	971	932
MAN Truck & Bus	1,127	1,127
MAN Energy Solutions	415	415
Ducati	404	404
Other	89	93
	16,828	16,793
Goodwill by operating segment		
Porsche	18,825	18,825
Scania Vehicles and Services	2,808	2,699
MAN Truck & Bus	587	587
MAN Energy Solutions	263	265
Ducati	290	290
ŠKODA	155	160
Porsche Holding Salzburg	130	151
Other	260	271
	23,318	23,247

The impairment test for recognized goodwill and brand names is based on value in use, which has been determined at the level of the respective brand. In this process, the WACC rates, based on the risk-free rate of interest, a market risk premium and the cost of debt, are applied. For more information on the general approach and key assumptions, please refer to the details provided on intangible assets in the “Accounting policies” section.

Moreover, the following aspects were of significance for the brands with material recognized brand names and goodwill:

The planning of the Porsche cash-generating unit is based on a significant increase in the proportion of electric vehicles over the planning period and the implementation of further optimization measures.

Planning at Scania Vehicles and Services is based on the growing share of electric vehicles in the fleet, against a backdrop of market demand for electric models, which tend to be more expensive.

For MAN Truck & Bus, the planning assumes a continuous improvement in the operating result in the course of the detailed planning period.

For all cash-generating units, 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	2020	2019	%
Total research and development costs	13,885	14,306	-2.9
of which: capitalized development costs	6,473	5,171	25.2
Capitalization ratio in %	46.6	36.1	
Amortization of capitalized development costs	4,644	4,064	14.3
Research and development costs recognized in profit or loss	12,056	13,199	-8.7

13. Property, plant and equipment

CHANGES IN PROPERTY, PLANT AND EQUIPMENT IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2019

€ 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, 2019¹	39,976	46,684	74,702	8,536	169,898
Foreign exchange differences	198	181	303	36	718
Changes in consolidated Group	56	16	28	8	108
Additions	1,862	1,716	5,403	6,104	15,084
Transfers	1,867	2,776	2,946	-7,109	481
Classified as held for sale	124	206	54	21	406
Disposals	303	1,077	1,331	29	2,740
Balance at Dec. 31, 2019	43,531	50,090	81,997	7,526	183,143
Depreciation and impairment					
Balance at Jan. 1, 2019¹	15,418	34,052	57,821	263	107,554
Foreign exchange differences	48	131	218	6	402
Changes in consolidated Group	0	3	15	0	18
Additions to cumulative depreciation	1,927	3,407	6,237	-	11,572
Additions to cumulative impairment losses	53	2	63	142	260
Transfers	151	20	38	-59	149
Classified as held for sale	26	88	30	-	145
Disposals	149	1,014	1,169	-	2,332
Reversal of impairment losses	32	14	331	109	487
Balance at Dec. 31, 2019	17,389	36,498	62,862	242	116,991
Carrying amount at Dec. 31, 2019	26,142	13,592	19,135	7,284	66,152

1 Due to the initial application of IFRS 16, the values in the opening balance were adjusted.

CHANGES IN PROPERTY, PLANT AND EQUIPMENT IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2020

€ 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, 2020	43,531	50,090	81,997	7,526	183,143
Foreign exchange differences	-907	-1,343	-1,765	-200	-4,214
Changes in consolidated Group	153	0	47	-32	168
Additions	1,914	1,281	3,935	4,410	11,540
Transfers	852	1,040	2,096	-3,883	105
Disposals	392	1,246	1,920	56	3,613
Balance at Dec. 31, 2020	45,151	49,822	84,389	7,766	187,129
Depreciation and impairment					
Balance at Jan. 1, 2020	17,389	36,498	62,862	242	116,991
Foreign exchange differences	-326	-973	-1,393	-9	-2,701
Changes in consolidated Group	34	9	28	-	71
Additions to cumulative depreciation	2,050	3,226	6,561	-	11,838
Additions to cumulative impairment losses	58	46	18	6	127
Transfers	115	-19	98	-193	2
Disposals	177	1,116	1,760	13	3,066
Reversal of impairment losses	0	6	7	3	16
Balance at Dec. 31, 2020	19,142	37,665	66,408	30	123,245
Carrying amount at Dec. 31, 2020	26,009	12,158	17,981	7,736	63,884

Government grants of €156 million (previous year: €146 million) were deducted from the cost of property, plant and equipment.

In connection with land and buildings, real property liens of €1,063 million (previous year: €1,221 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, 2019

€ million	Lease assets	Investment property	Total
Cost			
Balance at Jan. 1, 2019¹	57,998	803	58,802
Foreign exchange differences	1,075	5	1,080
Changes in consolidated Group	-46	-1	-48
Additions	24,906	43	24,949
Transfers	-533	0	-533
Disposals	19,015	6	19,021
Balance at Dec. 31, 2019	64,384	845	65,229
Depreciation and impairment			
Balance at Jan. 1, 2019¹	14,076	291	14,367
Foreign exchange differences	333	1	334
Changes in consolidated Group	73	-	73
Additions to cumulative depreciation	8,087	17	8,103
Additions to cumulative impairment losses	510	-	510
Transfers	-151	0	-151
Disposals	7,314	1	7,315
Reversal of impairment losses	169	0	169
Balance at Dec. 31, 2019	15,446	307	15,753
Carrying amount at Dec. 31, 2019	48,938	538	49,476

1 Due to the initial application of IFRS 16, the values in the opening balance were adjusted.

CHANGES IN LEASE ASSETS AND INVESTMENT PROPERTY IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2020

€ million	Lease assets	Investment property	Total
Cost			
Balance at Jan. 1, 2020	64,384	845	65,229
Foreign exchange differences	-2,972	-23	-2,995
Changes in consolidated Group	15	-	15
Additions	24,772	27	24,799
Transfers	67	39	106
Disposals	19,139	19	19,159
Balance at Dec. 31, 2020	67,127	869	67,996
Depreciation and impairment			
Balance at Jan. 1, 2020	15,446	307	15,753
Foreign exchange differences	-975	-4	-979
Changes in consolidated Group	3	-	3
Additions to cumulative depreciation	8,645	17	8,662
Additions to cumulative impairment losses	764	1	765
Transfers	35	1	36
Disposals	7,282	11	7,293
Reversal of impairment losses	195	0	195
Balance at Dec. 31, 2020	16,441	311	16,752
Carrying amount at Dec. 31, 2020	50,686	558	51,244

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 €1,199 million (previous year: €1,206 million). Fair value is estimated using an investment method based on internal calculations (Level 3 of the fair value hierarchy). Operating expenses of €55 million (previous year: €56 million) were incurred for the maintenance of investment property in use. Expenses of €0.4 million (previous year: €0.1 million) were incurred for unused investment property.

Rental income from investment property amounted to €58 million in the fiscal year (previous year: €61 million).

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, 2019

€ million	Equity-accounted investments	Other equity investments	Total
Gross carrying amount			
Balance at Jan. 1, 2019	8,826	2,142	10,968
Foreign exchange differences	22	6	28
Changes in consolidated Group	16	-252	-236
Additions	236	856	1,093
Transfers	-	0	0
Classified as held for sale	-	15	15
Disposals	76	88	164
Changes recognized in profit or loss	3,326	-	3,326
Dividends ¹	-3,786	-	-3,786
Other changes recognized in other comprehensive income	75	-34	41
Balance at Dec. 31, 2019	8,639	2,616	11,255
Impairment losses			
Balance at Jan. 1, 2019	392	668	1,060
Foreign exchange differences	1	0	1
Changes in consolidated Group	-	-131	-131
Additions	143	226	369
Transfers	-	-	-
Classified as held for sale	-	0	0
Disposals	-	31	31
Reversal of impairment losses	67	18	85
Balance at Dec. 31, 2019	470	714	1,183
Carrying amount at Dec. 31, 2019	8,169	1,902	10,071

1 Dividends are shown before withholding tax.

**CHANGES IN EQUITY-ACCOUNTED INVESTMENTS AND OTHER EQUITY INVESTMENTS
IN THE PERIOD JANUARY 1 TO DECEMBER 31, 2020**

€ million	Equity-accounted investments	Other equity investments	Total
Gross carrying amount			
Balance at Jan. 1, 2020	8,639	2,616	11,255
Foreign exchange differences	-49	-24	-73
Changes in consolidated Group	-756	-186	-943
Additions	3,756	488	4,244
Transfers	-	0	0
Disposals	196	50	246
Changes recognized in profit or loss	2,693	-3	2,690
Dividends ¹	-3,195	-	-3,195
Other changes recognized in other comprehensive income	-280	-8	-288
Balance at Dec. 31, 2020	10,610	2,833	13,443
Impairment losses			
Balance at Jan. 1, 2020	470	714	1,183
Foreign exchange differences	-5	-5	-10
Changes in consolidated Group	-108	57	-52
Additions	185	245	429
Transfers	-	-	-
Disposals	-	41	41
Reversal of impairment losses	11	1	12
Balance at Dec. 31, 2020	531	968	1,499
Carrying amount at Dec. 31, 2020	10,080	1,865	11,945

1 Dividends are shown before withholding tax.

Equity-accounted investments include joint ventures in the amount of €6,951 million (previous year: €5,851 million) and associates in the amount of €3,129 million (previous year: €2,318 million).

In the fiscal year, under additions to equity-accounted investments, an amount of €1.7 billion is attributable to the acquisition of shares in Argo AI, a total of €1.0 billion to the acquisition of additional shares in Volkswagen (Anhui) Automotive Company (formerly: JAC Volkswagen Automotive Company) and shares in Anhui Jianghuai Automobile Group Holdings; an amount of €0.5 billion relates to the capital increase at QuantumScape Corporation and the realization of a forward purchase transaction in this context. Further information on Argo AI and QuantumScape Corporation can be found in the “Key Events” section.

The main changes in the consolidated Group affecting equity-accounted investments in an amount of €-0.8 billion relate to the reclassification of shares in Volkswagen (Anhui) Automotive Company following its first-time consolidation.

Of the other changes recognized in other comprehensive income, €-239 million (previous year: €53 million) is attributable to joint ventures and €-41 million (previous year: €22 million) to associates. They are mainly the result of foreign exchange differences in the amount of €-319 million (previous year: €94 million), pension plan remeasurements in the amount of €103 million (previous year: €1 million) and fair value measurement of cash flow hedges in the amount of €16 million (previous year: €-27 million).

16. Noncurrent and current financial services receivables

€ million	CARRYING AMOUNT			FAIR VALUE	CARRYING AMOUNT			FAIR VALUE
	Current	Noncurrent	Dec. 31, 2020	Dec. 31, 2020	Current	Noncurrent	Dec. 31, 2019	Dec. 31, 2019
Receivables from financing business								
Customer financing	26,758	46,157	72,916	75,296	22,873	49,175	72,048	73,248
Dealer financing	12,435	1,994	14,428	14,400	16,781	2,512	19,293	19,270
Direct banking	307	7	314	315	305	5	310	310
	39,500	48,157	87,658	90,010	39,958	51,692	91,650	92,827
Receivables from operating leases	379	–	379	379	285	–	285	285
Receivables from finance leases	18,127	34,408	52,534	54,604	18,371	35,281	53,652	54,742
	58,006	82,565	140,571	144,994	58,615	86,973	145,588	147,855

The receivables from customer financing and finance leases contained in financial services receivables of €140.6 billion (previous year: €145.6 billion) increased by €21 million (previous year: increased by €2 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, €33 million (previous year: €181 million) was furnished as collateral for financial liabilities and contingent liabilities.

The receivables from dealer financing include €35 million (previous year: €22 million) receivable from unconsolidated affiliated companies.

17. Noncurrent and current other financial assets

€ million	CARRYING AMOUNT			CARRYING AMOUNT		
	Current	Noncurrent	Dec. 31, 2020	Current	Noncurrent	Dec. 31, 2019
Positive fair values of derivative financial instruments	2,616	3,435	6,051	1,622	1,628	3,250
Receivables from loans, bonds, profit participation rights (excluding interest)	6,421	3,568	9,988	6,639	3,278	9,917
Miscellaneous financial assets	4,197	832	5,029	3,955	646	4,601
	13,234	7,834	21,068	12,216	5,553	17,769

Other financial assets include receivables from related parties of €9.7 billion (previous year: €9.7 billion). Other financial assets amounting to €124 million (previous year: €244 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, miscellaneous financial assets include receivables from restricted deposits that serve as collateral (mainly under asset-backed securities transactions).

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

€ million	Dec. 31, 2020	Dec. 31, 2019
Transactions for hedging		
foreign currency risk from assets using fair value hedges	44	39
foreign currency risk from liabilities using fair value hedges	14	36
interest rate risk using fair value hedges	819	662
interest rate risk using cash flow hedges	11	13
foreign currency and price risk from future cash flows (cash flow hedges)	2,247	785
Hedging transactions Total	3,134	1,535
Assets related to derivatives not included in hedging relationships	2,917	1,715
Total	6,051	3,250

Positive fair values of €0 million (previous year: €6 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, 2020	Current	Noncurrent	Dec. 31, 2019
Other recoverable income taxes	4,063	1,058	5,121	4,244	806	5,050
Miscellaneous receivables	3,318	1,810	5,128	3,028	1,916	4,945
	7,381	2,867	10,248	7,272	2,722	9,995

Miscellaneous receivables include assets to fund post-employment benefits in the amount of €41 million (previous year: €65 million). This item also includes the share of the technical provisions attributable to reinsurers amounting to €46 million (previous year: €58 million).

Current other receivables are predominantly non-interest-bearing.

Other receivables include contingent receivables from long-term construction contracts recognized in accordance with project progress. They correspond to the contract assets recognized under contracts with customers and changed as follows:

€ million	2020	2019
Contingent construction contract receivables Balance at Jan. 1	314	352
Additions and disposals	64	-36
Changes in consolidated Group	-	-
Change in valuation allowances	10	1
Classified as held for sale	-	4
Changes in estimates and assumptions as well as contract modifications	-	-
Foreign exchange differences	0	2
Contingent construction contract receivables at Dec. 31	389	314

Costs to fulfill contracts were not capitalized in the Volkswagen Group. The Volkswagen Group capitalizes costs to obtain a contract and amortizes them on a straight-line basis over the life of the contract only if they are material, the underlying contract has a term of at least one year, and these costs would not have been incurred, if the corresponding contract had not been entered into. On December 31, 2020, costs to obtain contracts amounting to €63 million (previous year: €65 million) were recognized as assets. In 2020, amortization charges on capitalized costs to obtain contracts amounted to €23 million (previous year: €13 million). No impairment losses were recognized on capitalized costs to obtain contracts in 2020 and 2019.

19. Tax assets

€ million	CARRYING AMOUNT			CARRYING AMOUNT		
	Current	Noncurrent	Dec. 31, 2020	Current	Noncurrent	Dec. 31, 2019
Deferred tax assets	-	13,486	13,486	-	13,106	13,106
Tax receivables	1,186	376	1,563	1,190	341	1,531
	1,186	13,862	15,049	1,190	13,447	14,637

Deferred tax assets include an amount of €7,405 million (previous year: €7,490 million) arising from recognition and measurement differences between IFRS carrying amounts and the tax base, which will reverse within one year.

20. Inventories

€ million	Dec. 31, 2020	Dec. 31, 2019
Raw materials, consumables and supplies	6,966	6,099
Work in progress	4,022	4,110
Finished goods and purchased merchandise	27,204	30,617
Current lease assets	5,337	5,699
Prepayments	288	222
Hedges on inventories	6	-6
	43,823	46,742

At the same time as the relevant revenue was recognized, inventories in the amount of €170 billion (previous year: €192 billion) were included in cost of sales. Loss allowances (excluding lease assets) recognized as expenses in the reporting period amounted to €697 million (previous year: €672 million). Vehicles with a value amounting to €320 million (previous year: €340 million) were assigned as collateral for partial retirement obligations.

21. Trade receivables

€ million	Dec. 31, 2020	Dec. 31, 2019
Trade receivables from		
third parties	12,706	13,445
unconsolidated subsidiaries	181	180
joint ventures	3,305	4,283
associates	50	32
other investees and investors	2	1
	16,243	17,941

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

22. Marketable securities

The marketable securities serve to safeguard liquidity. They are mainly short-term fixed-income securities and shares. Most securities are measured at fair value. Current securities amounting to €661 million (previous year: €639 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.

23. Cash, cash equivalents and time deposits

€ million	Dec. 31, 2020	Dec. 31, 2019
Bank balances	33,403	25,264
Checks, cash-in-hand, bills and call deposits	507	659
	33,909	25,923

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

24. Equity

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

The Annual General Meeting on May 14, 2019 resolved to create authorized capital of up to €179 million, expiring on May 13, 2024, to issue new preferred bearer shares.

CHANGE IN ORDINARY AND PREFERRED SHARES AND SUBSCRIBED CAPITAL

	SHARES		€	
	2020	2019	2020	2019
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 €4,028 million are eligible for distribution following the transfer of €3,165 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 €4.80 per ordinary share and €4.86 per preferred share was distributed in fiscal year 2020.

HYBRID CAPITAL

In June 2020, Volkswagen AG placed two unsecured subordinated hybrid notes with an aggregate principal amount of €3.0 billion via a subsidiary, Volkswagen International Finance N.V., Amsterdam, the Netherlands (VIF). The hybrid notes are perpetual, but may be called unilaterally by VIF. The first possible call date for the first note (€1.5 billion and a coupon of 3.500%) is after five years, and the first possible call date for the second note (€1.5 billion and a coupon of 3.875%) is after nine years. This resulted in an inflow of cash funds amounting to €2,984 million, less transaction costs of €16 million. Additionally, there were noncash effects from the deferral of taxes amounting to €5 million.

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. IAS 32 only allows these hybrid notes to be classified as debt once the respective hybrid note is called.

NONCONTROLLING INTERESTS

As of December 31, 2020, noncontrolling interests amounted to €1,734 million (previous year: €1,870 million). Most of the noncontrolling interests in equity arose as a result of the IPO of the TRATON GROUP in fiscal year 2019.

On February 28, 2020, Volkswagen AG announced that it was planning to increase its interest in AUDI AG from approximately 99.64% to 100%. On July 31, 2020, the Annual General Meeting of AUDI AG resolved to implement a squeeze-out under stock corporation law (see "Key events" section).

The table below shows summarized financial information of the TRATON GROUP, including amortized goodwill and fair value adjustments, which were determined at the acquisition date:

€ million	2020	2019
Equity interest in % ¹	10.28	10.28
Equity interest	1,495	1,640
Noncurrent assets	29,599	29,623
Current assets	14,401	16,728
Noncurrent liabilities	14,582	14,938
Current liabilities	15,459	16,664
Sales revenue	22,580	26,901
Earnings after tax	-161	1,517
Other comprehensive income, net of tax	-288	-316
Dividend paid to noncontrolling interest shareholders	1	116
Gross cash flow	1,970	3,433
Change in working capital	17	-2,346
Cash flows from operating activities	1,987	1,087
Cash flows from investing activities	-1,293	634
Net cash flow	694	1,721

1 The percentage only includes direct noncontrolling interests.

25. Noncurrent and current financial liabilities

€ million	CARRYING AMOUNT			CARRYING AMOUNT		
	Current	Noncurrent	Dec. 31, 2020	Current	Noncurrent	Dec. 31, 2019
Bonds	25,909	66,717	92,626	19,789	68,839	88,629
Commercial paper and notes	16,146	21,380	37,526	18,103	20,147	38,250
Liabilities to banks	18,060	17,273	35,333	17,337	15,337	32,674
Deposits business	26,735	2,411	29,145	30,252	2,395	32,647
Loans and miscellaneous liabilities	794	1,909	2,702	1,429	1,629	3,058
Lease liabilities	1,005	5,119	6,124	1,002	5,208	6,210
	88,648	114,809	203,457	87,912	113,556	201,468

26. Noncurrent and current other financial liabilities

€ million	CARRYING AMOUNT			CARRYING AMOUNT		
	Current	Noncurrent	Dec. 31, 2020	Current	Noncurrent	Dec. 31, 2019
Negative fair values of derivative financial instruments	1,474	1,935	3,409	2,245	1,950	4,195
Interest payable	604	97	702	691	116	807
Miscellaneous financial liabilities	8,512	2,224	10,737	7,922	2,434	10,356
	10,590	4,257	14,847	10,858	4,499	15,358

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

€ million	Dec. 31, 2020	Dec. 31, 2019
Transactions for hedging		
foreign currency risk from assets using fair value hedges	39	107
foreign currency risk from liabilities using fair value hedges	39	5
interest rate risk using fair value hedges	116	97
interest rate risk using cash flow hedges	100	53
foreign currency and price risk from future cash flows (cash flow hedges)	1,284	2,172
Hedging transactions Total	1,578	2,435
Liabilities related to derivatives not included in hedging relationships	1,831	1,760
Total	3,409	4,195

Negative fair values of €101 million (previous year: €63 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

€ million	CARRYING AMOUNT			CARRYING AMOUNT		
	Current	Noncurrent	Dec. 31, 2020	Current	Noncurrent	Dec. 31, 2019
Payments received on account of orders	7,484	5,541	13,024	7,474	5,202	12,676
Liabilities relating to						
other taxes	3,294	110	3,404	2,812	133	2,946
social security	616	112	727	610	162	772
wages and salaries	4,501	960	5,462	5,848	1,008	6,856
Miscellaneous liabilities	2,085	1,183	3,267	2,576	766	3,342
	17,979	7,905	25,884	19,320	7,271	26,591

The liabilities from payments on account received under contracts with customers correspond to contract liabilities under contracts with customers. They changed as follows:

€ million	2020	2019
Liabilities from advance payments received under contracts with customers at Jan. 1	10,907	9,669
Additions and disposals	847	1,245
Changes in consolidated Group	13	12
Classified as held for sale	–	167
Changes in estimates and assumptions as well as contract modifications	–	–
Foreign exchange differences	–369	148
Liabilities from advance payments received under contracts with customers at Dec. 31	11,398	10,907

28. Tax liabilities

€ million	CARRYING AMOUNT			CARRYING AMOUNT		
	Current	Noncurrent	Dec. 31, 2020	Current	Noncurrent	Dec. 31, 2019
Deferred tax liabilities	–	4,890	4,890	–	5,007	5,007
Provisions for taxes	2,213	3,292	5,505	1,876	2,991	4,867
Tax payables	340	–	340	408	–	408
	2,552	8,181	10,734	2,283	7,998	10,282

Deferred tax liabilities include an amount of €502 million (previous year: €387 million) arising from recognition and measurement differences between IFRS carrying amounts and the tax base, which will reverse 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 2020, they amounted to a total of €2,622 million (previous year: €2,565 million) in the Volkswagen Group. Of this figure, contributions to the compulsory state pension system in Germany amounted to €1,826 million (previous year: €1,796 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, from changes in assumptions, as well as from gains or losses on plan assets, excluding amounts included in net interest income or expenses. 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 €25 million for fiscal year 2021.

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 2020, €15 million (previous year: €18 million) was recognized as an expense for healthcare costs. The related carrying amount as of December 31, 2020 was €228 million (previous year: €266 million).

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

€ million	Dec. 31, 2020	Dec. 31, 2019
Present value of funded obligations	24,101	21,090
Fair value of plan assets	13,264	12,478
Funded status (net)	10,838	8,613
Present value of unfunded obligations	34,200	32,710
Amount not recognized as an asset because of the ceiling in IAS 19	2	2
Net liability recognized in the balance sheet	45,040	41,324
of which provisions for pensions	45,081	41,389
of which other assets	41	65

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 aforementioned 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” 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” 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	
	2020	2019	2020	2019
Discount rate at December 31	0.70	1.09	1.70	2.30
Payroll trend	3.31	3.59	2.74	2.88 ¹
Pension trend	1.49	1.50	2.50	2.68
Employee turnover rate	1.16	1.24	4.36	3.75
Annual increase in healthcare costs	–	–	5.30	5.56

1 Prior-year figures adjusted.

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 Corporate Bond index was taken as the basis for the obligations of German Group companies. Similar indices were used for foreign pension obligations.

Some steps in the calculation of the EUR discount rate were adjusted in the course of the fiscal year in order to better reflect the persistently low interest rates in the valuation technique. The adjustment resulted in an increase in the discount rate by 0.1 percentage points and, consequently, a €1.4 billion decrease in actuarial losses.

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	2020	2019
Net liability recognized in the balance sheet at January 1	41,324	33,022
Current service cost	2,215	1,555
Net interest expense	459	660
Actuarial gains (-)/losses (+) arising from changes in demographic assumptions	-420	-67
Actuarial gains (-)/losses (+) arising from changes in financial assumptions	4,393	8,689
Actuarial gains (-)/losses (+) arising from experience adjustments	-394	27
Income/expenses from plan assets not included in interest income	677	654
Change in amount not recognized as an asset because of the ceiling in IAS 19	0	21
Employer contributions to plan assets	929	969
Employee contributions to plan assets	-8	-9
Pension payments from company assets	885	873
Past service cost (including plan curtailments)	-99	-25
Gains (-) or losses (+) arising from plan settlements	7	2
Changes in consolidated Group	11	-3
Classified as held for sale	-	14
Other changes	25	-8
Foreign exchange differences from foreign plans	-1	-4
Net liability recognized in the balance sheet at December 31	45,040	41,324

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	2020	2019
Present value of obligations at January 1	53,800	43,918
Current service cost	2,215	1,555
Interest cost	631	921
Actuarial gains(-)/losses (+) arising from changes in demographic assumptions	-420	-67
Actuarial gains(-)/losses (+) arising from changes in financial assumptions	4,393	8,689
Actuarial gains(-)/losses (+) arising from experience adjustments	-394	27
Employee contributions to plan assets	17	19
Pension payments from company assets	885	873
Pension payments from plan assets	292	300
Past service cost (including plan curtailments)	-99	-25
Gains (-) or losses (+) arising from plan settlements	7	-8
Changes in consolidated Group	16	-7
Classified as held for sale	-	182
Other changes	-471	-2
Foreign exchange differences from foreign plans	-219	135
Present value of obligations at December 31	58,301	53,800

In fiscal year 2020, a pension plan in the USA funded by external plan assets was settled. The resulting decrease in the present value of the defined benefit obligation in the amount of €520 million is shown under other changes. The plan settlement led to a loss of €7 million.

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, 2020		DEC. 31, 2019	
		€ million	Change in percent	€ million	Change in percent
Discount rate	is 0.5 percentage points higher	52,604	-9.77	48,598	-9.67
	is 0.5 percentage points lower	64,981	11.46	59,888	11.32
Pension trend	is 0.5 percentage points higher	61,360	5.25	56,633	5.27
	is 0.5 percentage points lower	55,552	-4.71	51,258	-4.73
Payroll trend	is 0.5 percentage points higher	58,808	0.87	54,331	0.99
	is 0.5 percentage points lower	57,843	-0.79	53,319	-0.89
Longevity	increases by one year	60,385	3.57	55,719	3.57

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 21 years (previous year: 22 years).

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

€ million	2020	2019
Active members with pension entitlements	36,124	33,027
Members with vested entitlements who have left the Company	3,642	3,136
Pensioners	18,535	17,637
	58,301	53,800

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	2020	2019
Payments due within the next fiscal year	1,162	1,161
Payments due between two and five years	5,334	5,121
Payments due in more than five years	51,806	47,518
	58,301	53,800

Changes in plan assets are shown in the following table:

€ million	2020	2019
Fair value of plan assets at January 1	12,478	10,920
Interest income on plan assets determined using the discount rate	172	261
Income/expenses from plan assets not included in interest income	677	654
Employer contributions to plan assets	929	969
Employee contributions to plan assets	9	9
Pension payments from plan assets	291	299
Gains (+) or losses (-) arising from plan settlements	-	10
Changes in consolidated Group	5	-5
Classified as held for sale	-	167
Other changes	-496	7
Foreign exchange differences from foreign plans	-219	139
Fair value of plan assets at December 31	13,264	12,478

Other changes in fiscal year 2020 resulted primarily from the derecognition of plan assets in the context of the settlement of a pension plan in the USA funded by external plan assets.

The investment of the plan assets to cover future pension obligations resulted in income of €849 million (previous year: income of €915 million).

Employer contributions to plan assets are expected to amount to €851 million (previous year: €927 million) in the next fiscal year.

Plan assets are invested in the following asset classes:

€ million	DEC. 31, 2020			DEC. 31, 2019		
	Quoted prices in active markets	No quoted prices in active markets	Total	Quoted prices in active markets	No quoted prices in active markets	Total
Cash and cash equivalents	628	–	628	501	–	501
Equity instruments	264	–	264	401	–	401
Debt instruments	496	–	496	850	5	855
Direct investments in real estate	–	121	121	–	110	110
Derivatives	20	–6	14	15	–28	–13
Equity funds	3,640	15	3,655	2,653	20	2,673
Bond funds	6,011	133	6,144	5,729	128	5,857
Real estate funds	190	–	190	170	–	170
Other funds	1,315	28	1,344	1,225	22	1,247
Other instruments	48	360	408	83	594	676

Plan assets include €12 million (previous year: €14 million) invested in Volkswagen Group assets and €5 million (previous year: €14 million) in Volkswagen Group debt instruments.

The following amounts were recognized in the income statement:

€ million	2020	2019
Current service cost	2,215	1,555
Net interest on the net defined benefit liability	459	662
Past service cost (including plan curtailments)	–99	–25
Gains (–) or losses (+) arising from plan settlements	7	2
Net income (–) and expenses (+) recognized in profit or loss	2,583	2,194

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, 2019¹	27,035	5,155	4,913	7,639	44,742
Foreign exchange differences	199	15	-14	41	241
Changes in consolidated Group	-1	3	-1	0	2
Classified as held for sale	33	10	-	12	55
Utilization	9,442	1,899	1,913	2,404	15,658
Additions/New provisions	11,618	2,633	2,835	3,486	20,572
Unwinding of discount/effect of change in discount rate	3	225	-29	20	220
Reversals	2,391	128	531	795	3,845
Balance at Dec. 31, 2019	26,988	5,993	5,260	7,976	46,217
of which current	13,468	2,466	3,112	5,388	24,434
of which noncurrent	13,520	3,527	2,147	2,588	21,783
Balance at Jan. 1, 2020	26,988	5,993	5,260	7,976	46,217
Foreign exchange differences	-653	-56	-170	-222	-1,101
Changes in consolidated Group	18	16	0	522	556
Utilization	9,625	2,275	2,347	2,086	16,333
Additions/New provisions	10,890	2,707	1,781	4,393	19,771
Unwinding of discount/effect of change in discount rate	17	108	-20	0	105
Reversals	1,637	223	586	1,117	3,564
Balance at Dec. 31, 2020	25,998	6,270	3,918	9,465	45,652
of which current	12,394	2,174	2,037	6,359	22,964
of which noncurrent	13,604	4,096	1,881	3,107	22,688

1 Due to the initial application of IFRS 16, the values in the opening balance were adjusted.

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.

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. Depending the jurisdiction concerned, they also include risk provisions for any non-compliance with legal emissions limits. Their measurement takes into account, among other things, the respective sales volume and the legally defined fee or the cost of acquiring emission rights from other manufacturers. Advantage has been taken of synergies between individual brands of the Volkswagen Group by establishing emission pools where possible.

Miscellaneous provisions additionally include provisions amounting to €1,265 million (previous year: €568 million) relating to the insurance business. The increase is mainly due to the expansion of the consolidated Group following an initial consolidation.

31. Trade payables

€ million	Dec. 31, 2020	Dec. 31, 2019
Trade payables to		
third parties	22,163	21,948
unconsolidated subsidiaries	186	222
joint ventures	156	375
associates	167	195
other investees and investors	3	5
	22,677	22,745