Notes to the balance sheet

(13) Property, plant and equipment

Property, plant and equipment is measured at cost in accordance with IAS 16 (Property, Plant and Equipment). The cost of production comprises individual costs as well as overhead costs which are directly allocatable.

If at least two years are required for manufacturing an asset in order to place it in its intended state in which it is capable of being used or sold, any directly attributable borrowing costs are capitalized as costs of production of the asset. If a direct link cannot be established, the average borrowing cost rate of the year under review is used. Turnover tax incurred in connection with the purchase or production of property, plant and equipment is only capitalized if input tax is not permitted to be deducted.

Subsequent costs are capitalized if the expenses enhance the economic benefit of the property, plant and equipment and if the costs can be reliably measured. On the other hand, all other repairs or maintenance are expensed.

Components of property, plant and equipment which are significant in relation to the total costs of purchase and costs of production are recognized separately and written down over their useful lives using the straight-line method.

Investment grants are deducted directly from the cost of purchase or cost of production of the assets for which the grants have been given.

Finance lease assets

Rented and leased assets where the underlying leases are classified as finance leases under IAS 17 (Leases) are capitalized with the lower of fair value or the present value of minimum lease payments at the start of the lease, and are depreciated using the straight-line method over the financial service life of the asset or the shorter duration of the lease.

Property, plant and equipment (€ million)	Land	Commercial, operating and other buildings	Permanent way structures	Track infrastructure, signaling and control equipment	Rolling stock for passenger and freight transport	Technical equipment and machinery	Other equipment, operational and office equipment	Advance payments and construction in progress	Total
COST OF PURCHASE AND COST OF PRODUCTION									
As of Jan 1, 2018	4,150	7,707	15,210	16,921	31,317	1,842	5,107	4,108	**86,362**
Changes in the scope of consolidation	3	30	–	–	112	1	1	0	**147**
thereof additions	3	30	–	–	112	1	1	0	**147**
thereof disposals	–	–	–	–	–	–	0	–	**–**
Additions	51	326	767	1,168	1,868	114	447	6,138	**10,879**
Addition borrowing costs	–	–	–	–	–	–	–	39	**39**
Investment grants	0	-87	-640	-1,012	-16	-24	-53	-5,335	**-7,167**
Transfers	8	226	160	135	220	56	157	-961	**1**
Transfers related to held-for-sale assets	–	–	–	–	–	–	–	–	**–**
Changes with no impact on the income statement	–	0	–	–	–	–	0	–	**0**
Disposals	-55	-79	-22	-194	-529	-76	-369	26	**-1,298**
Currency translation differences	-2	-10	0	0	-34	-3	-5	0	**-54**
As of Dec 31, 2018	**4,155**	**8,113**	**15,475**	**17,018**	**32,938**	**1,910**	**5,285**	**4,015**	88,909
ACCUMULATED DEPRECIATION									
As of Jan 1, 2018	-681	-3,489	-5,253	-12,583	-20,049	-1,295	-3,399	-5	**-46,754**
Changes in the scope of consolidation	0	-14	–	–	-36	-1	0	–	**-51**
thereof additions	–	-14	–	–	-36	-1	0	–	**-51**
thereof disposals	–	–	–	–	–	–	0	–	**–**
Depreciation	-8	-245	-193	-353	-1,224	-97	-398	0	**-2,518**
Impairments	-1	-2	0	-1	-3	-1	-2	–	**-10**
Recoveries in value	–	0	–	45	5	1	0	–	**51**
Transfers	1	4	0	1	28	9	-42	-1	**0**
Disposals	19	60	13	178	444	71	314	0	**1,099**
Currency translation differences	0	7	0	1	19	1	3	0	**31**
As of Dec 31, 2018	**-670**	**-3,679**	**-5,433**	**-12,712**	**-20,816**	**-1,312**	**-3,524**	**-6**	**-48,152**
Carrying amount as of Dec 31, 2018	**3,485**	**4,434**	**10,042**	**4,306**	**12,122**	**598**	**1,761**	**4,009**	**40,757**
Carrying amount as of Dec 31, 2017	3,469	4,218	9,957	4,338	11,268	547	1,708	4,103	**39,608**

Property, plant and equipment (€ million)	Land	Commercial, operating and other buildings	Permanent way structures	Track infra-structure, signaling and control equipment	Rolling stock for passenger and freight transport	Technical equipment and machinery	Other operational and office equipment	Advance payments and construction in progress	**Total**
COST OF PURCHASE AND COST OF PRODUCTION									
As of Jan 1, 2017	4,194	7,517	14,984	16,869	30,286	1,762	4,976	3,623	**84,211**
Changes in the scope of consolidation	9	22	–	–	36	3	2	0	**72**
thereof additions	11	28	–	–	52	3	3	–	**97**
thereof disposals	-2	-6	–	–	-16	0	-1	–	**-25**
Additions	23	257	740	1,338	1,468	87	497	5,796	**10,206**
Addition borrowing costs	–	–	–	–	–	–	–	38	**38**
Investment grants	0	-108	-653	-1,222	-49	-12	-58	-4,594	**-6,696**
Transfers	3	126	150	127	200	49	104	-763	**-4**
Transfers related to held-for-sale assets	–	–	–	–	–	–	1	–	**1**
Changes with no impact on the income statement	–	0	–	–	–	–	0	–	**0**
Disposals	-67	-76	-10	-191	-578	-42	-380	9	**-1,335**
Currency translation differences	-12	-31	-1	0	-46	-5	-35	-1	**-131**
As of Dec 31, 2017	**4,150**	**7,707**	**15,210**	**16,921**	**31,317**	**1,842**	**5,107**	**4,108**	**86,362**
ACCUMULATED DEPRECIATION									
As of Jan 1, 2017	-819	-3,306	-5,038	-12,160	-19,395	-1,254	-3,349	-6	**-45,327**
Changes in the scope of consolidation	-1	-10	–	–	-23	-3	-3	–	**-40**
thereof additions	-1	-12	–	–	-34	-3	-3	–	**-53**
thereof disposals	–	2	–	–	11	0	0	–	**13**
Depreciation	-8	-247	-223	-521	-1,197	-86	-394	–	**-2,676**
Impairments	0	-5	-1	-127	-8	-1	0	–	**-142**
Recoveries in value	120	0	–	48	30	0	0	–	**198**
Transfers	0	1	0	0	-1	5	-6	1	**0**
Disposals	23	63	8	177	521	40	328	0	**1,160**
Currency translation differences	4	15	1	0	24	4	25	0	**73**
As of Dec 31, 2017	**-681**	**-3,489**	**-5,253**	**-12,583**	**-20,049**	**-1,295**	**-3,399**	**-5**	**-46,754**
Carrying amount as of Dec 31, 2017	**3,469**	**4,218**	**9,957**	**4,338**	**11,268**	**547**	**1,708**	**4,103**	**39,608**
Carrying amount as of Dec 31, 2016	3,375	4,211	9,946	4,709	10,891	508	1,627	3,617	**38,884**

The additions to the borrowing costs include an average borrowing cost rate of 2.54% (previous year: 2.77%).

The impairments of € 10 million (previous year: € 142 million) mainly relate to rolling stock for passenger and freight transport.

Recoveries in value of € 51 million (previous year: € 198 million) relate mainly to track infrastructure, signaling and control equipment of DB Netz AG (€ 45 million) as well as freight transport of Euro Cargo Rail SAS, Paris/France.

In the year under review, the carrying amount disposals for assets under construction included carrying amount disposals of € 27 million (previous year: € 18 million). These are attributable to the repayment of investment grants which had been received in previous years and deducted from assets.

As of December 31, 2018, restrictions to rights of disposal in relation to property, plant and equipment existed to the extent of € 39 million (as of December 31, 2017: € 37 million) mainly at S.I.A. Società Italiana Autoservizi S.P.A., Brescia/Italy and S.A.B. Autoservizi S.R.L., Bergamo/Italy.

Property, plant and equipment includes rented assets which are shown separately in the following overview. The rented property, plant and equipment comprises assets which are substantially but not legally owned by DB Group, so that the underlying lease agreements have to be classified as finance leases.

Rented assets classified as finance leases (€ million)	**Land**	**Commercial, operating and other buildings**	**Rolling stock for passenger and freight transport**	**Other operational and office equipment**	**Total**
Cost of purchase and cost of production	17	711	143	0	**871**
Accumulated depreciation	-5	-233	-51	0	**-289**
Carrying amount as of Dec 31, 2018	**12**	**478**	**92**	**0**	**582**
Cost of purchase and cost of production	20	646	171	0	**837**
Accumulated depreciation	-5	-219	-63	0	**-287**
Carrying amount as of Dec 31, 2017	**15**	**427**	**108**	**0**	**550**

The figure shown for the commercial, operating and other buildings under leased assets also relates to real estate of DB AG, concourse buildings of DB Station & Service AG and energy installations of DB Energie GmbH. The figure shown under rolling stock for passenger and freight transport relates mainly to rolling stock used by the transport companies of DB Group (locomotives, freight cars and buses). The additions in the year under review relate mainly to commercial and operating buildings as well as rolling stock for passenger and freight transport.

The assets which in certain cases are determined on the basis of retrospective calculations and completed surveys and which are leased by way of operating leases have the following residual carrying amounts:

Rented assets classified as operating leases (€ million)	**Properties**	**Mobile assets**
Cost of purchase and cost of production	1,470	6,092
Accumulated depreciation	-459	-4,616
Carrying amount as of Dec 31, 2018	**1,011**	**1,476**
Cost of purchase and cost of production	1,518	5,781
Accumulated depreciation	-469	-4,522
Carrying amount as of Dec 31, 2017	**1,049**	**1,259**

The residual carrying amounts and cumulative depreciation for the properties (land and buildings) and also the mobile assets (mainly vehicles) are in line with the previous year figures. The increased leasing of new vehicles or vehicles with higher cost of purchase or cost of production compared with the previous year was one of the factors resulting in slightly higher residual carrying amounts for mobile assets as well as a slight increase in the scheduled depreciation. Rental and leasing income resulting from the rental and leasing of these assets are expected to be received in future years as detailed in the following:

	Residual maturity							
Expected rental and leasing income (nominal values) (€ million)	**Less than 1 year**	**1 to 2 years**	**2 to 3 years**	**3 to 4 years**	**4 to 5 years**	**More than 5 years**	**Total more than 1 year**	**Total**
AS OF DEC 31, 2018								
Minimum lease income	374	206	170	147	133	671	**1,327**	**1,701**
AS OF DEC 31, 2017								
Minimum lease income	377	228	177	127	104	434	**1,070**	**1,447**

(14) Intangible assets

Purchased intangible assets are shown with their cost of purchase in accordance with IAS 38 (Intangible Assets). Intangible assets manufactured in-house are recognized with their cost of production, and consist mainly of software.

Cost of production comprise mainly costs for materials and services, wage and salary costs as well as relevant overhead costs.

Intangible assets (excluding goodwill and the Arriva brand) are subsequently valued at cost of purchase or cost of production less depreciation and impairments plus any recoveries in value.

	Capitalized development costs – products in use		Capitalized development costs – products under development		Purchased intangible assets		Goodwill		Intangible assets with indefinite useful life		Advance payments		**Total**	
Intangible assets (€ million)	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	**2017**
COST OF PURCHASE AND COST OF PRODUCTION														
As of Jan 1	175	108	186	239	2,455	2,281	3,026	3,120	5	5	0	0	**5,847**	**5,753**
Changes in the scope of consolidation	–	–	–	–	89	20	1	9	–	–	–	–	**90**	**29**
thereof additions	–	–	–	–	89	21	1	10	–	–	–	0	**90**	**31**
thereof disposals	–	–	–	–	–	-1	–	-1	–	–	–	–	**–**	**-2**
Additions	59	60	230	143	37	55	–	0	–	0	–	–	**326**	**258**
Investment grants	–	-1	-41	-26	-1	-1	–	–	–	–	–	–	**-42**	**-28**
Transfers	45	13	-71	-154	25	145	0	–	–	0	–	0	**-1**	**4**
Changes with no impact on the income statement	–	–	–	–	0	-10	–	–	–	–	–	–	**0**	**-10**
Disposals	-1	-4	-8	-15	-170	-11	-2	0	–	–	0	–	**-181**	**-30**
Currency translation differences	-1	-1	0	-1	-9	-24	0	-103	–	0	–	–	**-10**	**-129**
As of Dec 31	**277**	**175**	**296**	**186**	**2,426**	**2,455**	**3,025**	**3,026**	**5**	**5**	**0**	**0**	**6,029**	**5,847**
ACCUMULATED DEPRECIATION														
As of Jan 1 adjusted	-40	-30	-2	-2	-1,719	-1,546	-487	-484	0	0	–	–	**-2,248**	**-2,062**
Changes in the scope of consolidation	–	–	–	–	0	0	–	–	–	–	–	–	**0**	**0**
thereof additions	–	–	–	–	0	0	–	–	–	–	–	–	**0**	**0**
thereof disposals	–	–	–	–	–	0	–	–	–	–	–	–	**–**	**0**
Depreciation	-22	-14	–	–	-174	-190	–	–	–	–	–	–	**-196**	**-204**
Impairments	-5	–	-5	-6	-4	-17	-1	–	–	–	–	–	**-15**	**-23**
Recoveries in value	–	–	–	–	–	–	–	–	–	–	–	–	**–**	**–**
Transfers	–	–	2	0	-1	0	–	–	–	0	–	–	**1**	**0**
Disposals	0	4	–	6	147	16	3	–	–	0	–	–	**150**	**26**
Currency translation differences	0	0	–	0	5	18	4	-3	–	0	–	–	**9**	**15**
As of Dec 31	**-67**	**-40**	**-5**	**-2**	**-1,746**	**-1,719**	**-481**	**-487**	**0**	**0**	**–**	**–**	**-2,299**	**-2,248**
Carrying amount as of Dec 31	**210**	**135**	**291**	**184**	**680**	**736**	**2,544**	**2,539**	**5**	**5**	**0**	**0**	**3,730**	**3,599**
Carrying amount as of Dec 31 of previous year	135	78	184	237	736	735	2,539	2,636	5	5	0	0	**3,599**	**3,691**

The acquired intangible assets mainly comprise software (about € 276 million carrying amount), franchises and rights (about € 148 million carrying amount) and acquired customer and franchise contracts (about € 210 million carrying amount).

There are no other legal, regulatory, contractual, competition-related, economic or other factors which limit the useful life of the acquired Arriva brand (carrying amount € 32 million).

Impairments of about € 14 million (previous year: € 23 million) were recognized mainly at DB Cargo AG and Transportes Ferroviarios Especiales S.A., Madrid/Spain.

Segment reporting shows the allocation of reported goodwill to the various segments.

(15) Investments accounted for using the equity method

Shares in associated companies and joint ventures are accounted for using the equity method. The carrying amount, based on the Group costs of purchase at the time of the purchase, is updated according to DB Group share of changes in equity position of the company accounted for using the equity method.

The shares in the investments accounted for using the equity method have developed as follows:

(€ million)	2018	2017
As of Jan 1	500	534
Additions	0	0
Disposals	-26	-1
Share of DB Group in profits	12	14
Capital increase	0	0
Dividends received	-11	-19
Impairments	-	-
Currency translation differences	11	-28
Other valuation	0	0
As of Dec 31	**486**	**500**

The figure shown in the balance sheet as of December 31, 2018 is mainly attributable to the shares held in the associated companies EUROFIMA European Company for the Financing of Railroad Rolling Stock (EUROFIMA), Basel/Switzerland and Barraqueiro SGPS SA, Lisbon/Portugal. The shares in EUROFIMA are subject to restrictions in terms of being sold; new shareholders must be railway administration entities which additionally require a guarantee of their respective country guaranteeing their obligations. The disposals relate mainly to **VT-Arriva** **190 ff.**

(16) Deferred taxes

Deferred taxes are calculated in accordance with IAS 12 (Income Taxes).

The theoretical income tax rate for corporations for domestic companies used as the basis for calculating deferred taxes is 30.5%. The income tax rate comprises the corporation tax rate plus solidarity surcharge and an average trade tax rate. Foreign subsidiaries use their relevant local tax rates for calculating deferred taxes.

A deferred tax asset is recognized in accordance with IAS 12.24 or IAS 12.34 if, after corresponding deferred tax liabilities have been deducted, it is likely that adequate taxable income is available. The mid-term planning is used as the basis in this respect. Deferred tax assets relating to income which can be generated after the mid-term period are not recognized, on the grounds that they cannot be reliably determined.

Deferred taxes are established on the basis of the tax rates which can be expected for the period in which the deferred tax is realized on the basis of existing laws or laws which have in essence been adopted.

Critical assessments and appraisals

The calculation of deferred tax assets is generally based on the mid-term planning. If the sum of net profits planned for the mid-term planning period were to decline by 10% in conjunction with otherwise unchanged tax parameters, deferred tax assets would have to be reduced by € 93 million (previous year: € 142 million).

Deferred tax assets are broken down as follows:

As of Dec 31 (€ million)	2018	2017
Deferred tax assets in respect of temporary differences	506	652
Deferred tax assets in respect of losses carried forward	526	764
Total	**1,032**	**1,416**

No deferred tax assets have been created in relation to the following losses carried forward and temporary differences:

As of Dec 31 (€ million)	2018	2017
Tax loss carry-forwards for which no deferred tax asset has been created	14,440	13,564
Temporary differences for which no deferred tax asset has been created	4,622	3,917
Temporary differences which are not permitted to be recognized in accordance with IAS 12.24b in conjunction with 12.33	2,273	2,465
Total	**21,335**	**19,946**

The losses carried forward are mainly attributable to the tax law treatment of Federal Government grants paid in the past to DB AG in accordance with section 21 (5) and section 22 (1) Deutsche Bahn Foundation Act (Deutsche Bahn Gründungsgesetz; DBGrG) as a contribution.

On the basis of current law, the domestic losses carried forward are fully allowable in accordance with current legislation (in terms of the actual amount and justification).

The temporary differences which are not permitted to be recognized in accordance with IAS 12.33 relate exclusively to additional tax depreciation from previously received tax-free investment grants.

The following deferred tax assets and deferred tax liabilities shown in the balance sheet are due to statement and valuation differences for the individual balance sheet items and tax losses carried forward:

As of Dec 31 (€ million)	Deferred tax assets 2018	Deferred tax assets 2017	Deferred tax liabilities 2018	Deferred tax liabilities 2017
NON-CURRENT ASSETS				
Property, plant and equipment	119	186	150	145
Intangible assets	3	2	43	42
Shares in companies accounted for using the equity method	1	1	1	1
Other financial assets	5	5	0	2
CURRENT ASSETS				
Inventories	3	3	1	1
Trade receivables	8	9	1	1
Other financial assets	5	5	9	12
NON-CURRENT LIABILITIES				
Financial debt	38	71	2	3
Other liabilities	61	45	4	7
Derivative financial instruments	4	7	0	0
Pension obligations	207	172	3	3
Other provisions	109	138	0	1
CURRENT LIABILITIES				
Financial debt	6	23	1	1
Other liabilities	39	41	46	20
Other provisions	30	72	23	10
Losses carried forward	526	764	0	0
Total	**1,164**	**1,544**	**284**	**249**
Netting [1]	-132	-128	-132	-128
Amount stated in the balance sheet	**1,032**	**1,416**	**152**	**121**

[1] To the extent permitted by IAS 12 (Income Taxes).

Tax assets and liabilities are netted if they exist in relation to the same tax authority, if they are of identical maturity and if they relate to the same tax subject.

Of the deferred tax assets of € 1,164 million (as of December 31, 2017: € 1,544 million), a figure of € 91 million (as of December 31, 2017: € 153 million) will probably be realized in the course of the next 12 months. Of the deferred tax liabilities of € 284 million (as of December 31, 2017: € 249 million), a figure of € 83 million (as of December 31, 2017: € 45 million) will probably be realized in the course of the next 12 months.

Deferred tax assets recognized directly in equity (€ 110 million; as of December 31, 2017: € 77 million) are shown in the figure disclosed in the balance sheet for deferred taxes.

(17) Other investments and securities

Other investments are shown with their fair value.

Long- or short-term securities are recognized with their market values as of the reporting date – where such values exist. Changes in fair value are recognized with no impact on the income statement in the reserve attributable to the marking-to-market of securities.

Other investments and securities have developed as follows:

(€ million)	Other investments 2018	Other investments 2017	Securities 2018	Securities 2017	Total 2018	Total 2017
As of Jan 1	38	10	3	3	**41**	**13**
Currency translation differences	0	0	0	0	**0**	**0**
Changes in scope of consolidation	-1	–	–	–	**-1**	**–**
Additions	15	28	0	0	**15**	**28**
Disposals through sale	0	0	–	0	**0**	**0**
Other disposals	0	–	–	–	**0**	**–**
Fair value changes	–	–	-1	0	**-1**	**0**
Reclassifications	-8	0	–	–	**-8**	**0**
Other	0	0	–	–	**0**	**0**
As of Dec 31	**44**	**38**	**2**	**3**	**46**	**41**
thereof at cost/cost of purchase	–	38	0	0	**0**	**38**
thereof fair value (recognized directly in equity)	28	–	2	3	**30**	**3**
thereof fair value (recognized in the income statement)	16	–	–	–	**16**	**–**
Non-current portion	44	38	1	2	**45**	**40**
Current portion	–	–	1	1	**1**	**1**

(18) Inventories

All costs which are directly related to the procurement process are capitalized as the costs of purchase of the inventories. The average method is used as the basis for establishing the cost of purchase of fungible and homogeneous raw materials and supplies. The costs of production comprise the individual costs and also the directly attributable overheads; borrowing costs and idle costs are not capitalized, and instead are recognized as expense in the period in which they are incurred.

As of the balance sheet date, inventories are measured with the lower of cost or net realizable value.

Inventories are broken down as follows:

As of Dec 31 (€ million)	2018	2017
Raw materials, consumables and supplies	1,383	1,253
Unfinished products, unfinished services	159	136
Finished products and goods	102	93
Advance payments	41	41
Impairments	-316	-372
Total	**1,369**	**1,151**

(19) Receivables and other assets

In general, receivables and other financial assets are measured at amortized cost of purchase. Finance lease receivables, advance payments made and plan assets in accordance with IAS 19 (Employee Benefits) are not allocated to any category of IFRS 9 (previous year: IAS 39) **(valuation categories in accordance with IFRS 9 219)**.

Receivables for which there are substantial objective indications of an impairment are adjusted appropriately. Portfolio-based allowances are also recognized in relation to groups of assets; in particular, historical default rates are taken into consideration. In DB Group, the maturities of the receivables and default risks are monitored constantly.

Some transport contracts include a handing over obligation specifying that the deployed assets owned by DB Group have to be handed over at the end of the contract. Other transport contracts include that the deployed assets have to be rented from the contracting organization or a capital service guarantee to be provided by the contracting organization for leasing from independent financial service providers. In accordance with IFRIC 12 (Service Concession Arrangements), the corresponding capital expenditures are capitalized as receivables from transport concession arrangements at the end of the contract, with the guaranteed residual values being separated. The receivables are redeemed out of the concession fees, which means that not all of the concession fees result in revenues. The residual value receivables are disclosed at their present value under the financing receivables.

Critical assessments and appraisals

The impairment of doubtful receivables to a considerable extent comprises assessments and appraisals of individual receivables which are based on the creditworthiness of the particular customer, current economic developments as well as an analysis of historical bad debts at the portfolio level. If the impairment is derived on the basis of historical default rates at the portfolio level, any decline in the overall volume of receivables results in a corresponding reduction of such provisions (and vice versa).

Receivables and other assets comprise the following:

(€ million)	Trade receivables	Receivables from financing	Receivables from transport concessions	Advance payments	Other assets	Total
AS OF DEC 31, 2018						
Gross value	5,128	184	163	282	1,638	**7,395**
Impairments	–142	–10	0	–	–31	**–183**
Net value	**4,986**	**174**	**163**	**282**	**1,607**	**7,212**
thereof due from related parties	34	12	–	0	384	**430**
AS OF DEC 31, 2017						
Gross value	4,791	137	126	243	1,442	**6,739**
Impairments	–181	–6	–	–	–59	**–246**
Net value	**4,610**	**131**	**126**	**243**	**1,383**	**6,493**
thereof due from related parties	41	14	–	0	276	**331**

DB Group concluded factoring agreements with a bank; according to the terms of this agreement, the bank is obliged to purchase on a revolving basis current trade receivables in certain companies of the DB Schenker segment up to a maximum volume of € 709 million. Criteria for defining the receivables include the following: legal enforceability, the invoice falling due within 180 days of the invoice date, and the fact that the debtor is not an intra-Group debtor. The agreement has been concluded for an indefinite period of time. DB Group will continue to be responsible for sales ledger accounting and the dunning system on behalf of the bank until further notice. The risks relating to the receivables which are sold and which are relevant for the risk assessment are the credit risk and the risk of late payment. The purchase price is equivalent to the nominal amount. DB Group bears bad debt related to credit risks from the various tranches as well as late-payment risks up to a maximum amount of € 162 million. The other bad debts related to the credit risk are borne by the bank. Virtually none of the opportunities and risks associated with the receivables have been transferred or retained (breakdown of major risks between DB Group and bank). For some of the receivables, the right of disposal over the receivables which have been sold has been transferred to the bank as the bank has the actual ability to sell on the receivables. These receivables have been completely derecognized. As of December 31, 2018, outstanding receivables with a volume of € 686 million had been sold; of this figure, an amount of € 250 million had been entirely derecognized and an amount of € 436 million had been derecognized to the extent of the transferred risk. Purchase price payments received by the bank increased the cash flow from operating activities.

The receivables from financing include residual values of € 62 million agreed with the public transport authorities for transport contracts. These residual value receivables mainly relate to rolling stock which are sold for a fixed price at the end of the transport contract to the public transport authority or to a third party designated by the public transport authority.

The other assets disclose for the first time contract fulfillment costs of € 22 million.

The impairments for the financial instruments classified in accordance with IFRS 7 have developed as follows:

(€ million)	Trade receivables	Receivables from financing	Receivables from transport concessions	Other assets	Total
As of Jan 1, 2018	-181	-6	–	-59	**-246**
Change in method IFRS 9	24	0	–	0	**24**
Additions	-26	-4	0	-3	**-33**
Reversals	24	–	–	11	**35**
Amounts used	17	0	–	20	**37**
Changes in the scope of consolidation	0	–	–	0	**0**
Currency translation differences	0	0	–	0	**0**
As of Dec 31, 2018	**-142**	**-10**	**0**	**-31**	**-183**
As of Jan 1, 2017	-206	-3	–	-47	**-256**
Change in method IFRS 9	–	–	–	–	**–**
Additions	-15	-3	0	-18	**-36**
Reversals	32	–	–	5	**37**
Amounts used	7	0	–	1	**8**
Changes in the scope of consolidation	-2	0	–	0	**-2**
Currency translation differences	3	0	–	0	**3**
As of Dec 31, 2017	**-181**	**-6**	**–**	**-59**	**-246**

Individual allowances are created in relation to receivables if there are objective indications of an impairment. In the case of identical receivables (portfolios of receivables) which cannot be identified as impaired individually, the year under review has for the first time seen the creation of risk provisioning for expected loan losses within the framework of the first-time adoption of **IFRS 9** **188**. Any impairments which are recognized are deducted from financial assets on the assets side of the balance sheet. Previous impairments are reversed if the reasons for the original impairments are no longer applicable.

Expenses of € 49 million were incurred in the year under review for the complete derecognition of receivables and other assets (previous year: € 50 million).

Income of € 16 million was reported for payments received in relation to previously derecognized receivables and other assets (previous year: € 5 million).

For trade receivables, DB Group uses the simplified approach according to IFRS 9 in order to measure the expected loan losses. Accordingly, for all trade receivables, the loan losses expected over the life of the receivables are used for this purpose. For measuring the expected loan losses, trade receivables are pooled on the basis of common credit risk features. The expected loan losses are determined on a collective basis using impairment matrices. These are determined on the basis of the individual segments within DB Group. The expected loan losses amounted to € 23 million as of December 31, 2018.

As of Dec 31, 2018 (€ million)	Net carrying amount	Expected loss rate (%)	Risk provisioning	thereof risk provisioning for past due receivables	thereof risk provisioning for receivables not past due
Trade receivables	4,986	0.46	23	13	10

Major receivable defaults can be used as the basis for breaking down the impairment matrices for past due receivables into the following maturity structure:

	Past due (days)		
As of Dec 31, 2018 (€ million)	up to 30	31–120	more than 120
Risk provisioning for past due receivables	1	7	5

For receivables from financing as well as other financial receivables, the expected impairment requirement for major items was determined in relation to specific receivables. Risk provisioning totaling € 6 million was created for this purpose as of December 31, 2018.

For major other financial receivables, the current counterparty-specific default rates are used for this purpose. With a gross carrying amount of € 55 million, this results in a loss rate of 6.0%. The average rated default rate of a specific country is used for other financial receivables. With a gross carrying amount of € 1,456 million, this results in a loss rate of 0.2%.

The change in the process of determining expected losses results in a one-off positive effect of € 24 million in DB Group; this was disclosed separately in equity **(Consolidated statement of changes in equity 185)**.

The following overview shows the maturity structure of the receivables for the financial instruments classified in accordance with IFRS 7 and the advance payments which have been made:

	Residual maturity							
(€ million)	Less than 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	More than 5 years	Total more than 1 year	Total
AS OF DEC 31, 2018								
Trade receivables	4,962	15	8	1	0	0	**24**	**4,986**
Receivables from financing	98	3	1	1	1	70	**76**	**174**
Receivables from transport concessions	16	10	10	10	10	107	**147**	**163**
Advance payments	230	52	–	–	–	–	**52**	**282**
Other assets	1,526	27	3	15	6	30	**81**	**1,607**
Total	**6,832**	**107**	**22**	**27**	**17**	**207**	**380**	**7,212**
thereof non-financial assets	549	64	2	5	0	13	**84**	**633**
AS OF DEC 31, 2017								
Trade receivables	4,571	17	14	7	1	0	**39**	**4,610**
Receivables from financing	77	7	3	1	1	42	**54**	**131**
Receivables from transport concessions	13	10	10	10	10	73	**113**	**126**
Advance payments	196	47	–	–	–	–	**47**	**243**
Other assets	1,334	30	11	0	0	8	**49**	**1,383**
Total	**6,191**	**111**	**38**	**18**	**12**	**123**	**302**	**6,493**
thereof non-financial assets	513	47	–	–	–	6	**53**	**566**

The significant increase in trade receivables compared with the previous year was attributable to almost all segments. A slightly opposite development was evident mainly in the DB Long-Distance segment.

The current other assets also comprise the customs receivables of the DB Schenker segment. In virtually all segments, there have been increases in the other assets compared with the previous year; significant reductions relate to the DB Arriva segment. The increase in the other assets was mainly due to higher receivables due from the Federal Government.

As a result of the large number of customers in the various operating segments, there is no evidence of any concentration of credit risks with trade receivables.

The fair values of the balance sheet items receivables and other assets, trade receivables as well as other receivables and assets essentially correspond to the carrying amounts.

The maximum default risk is essentially equivalent to the carrying amount in each case. Collateral is not normally held.

As of the closing date, there are no indications that debtors of the receivables which are neither impaired nor overdue will not meet their payment obligations.

(20) Income tax receivables

The income tax receivables relate to advance payments which have been made as well as allowable withholding taxes.

(21) Derivative financial instruments

Upon conclusion of a contract, derivative financial instruments are generally classified as hedging instruments for hedging the cash flows from contractual obligations or anticipated transactions (cash flow hedge).

Cash flow hedges

Cash flow hedges are used to provide protection against fluctuations in the cash flows of financial assets or liabilities or anticipated transactions. When future cash flows are hedged, the hedging instruments are also recognized with their fair value. Changes in value are initially recognized in shareholders' equity with no impact on the income statement, and are only recognized in the income statement at the point at which the corresponding losses or profits from the underlying have an impact on the income statement or the transactions expire. Any ineffectiveness is recognized in the income statement in accordance with IFRS 9.

Derivative financial instruments which do not satisfy the requirements for recognizing hedges in accordance with IFRS 9

If hedges which in economic terms are used for interest, currency or price hedging do not satisfy the restrictive requirements of IFRS 9 for being recognized as a hedge, the changes in value are immediately recognized in the income statement.

Calculation of the fair value

The fair value of financial instruments which are traded in an active market is derived from the market price applicable on the balance sheet date. Common valuation methods such as option price or present-value models are used for determining the fair value of financial instruments which are not traded in an active market. If valuation-relevant parameters are not directly observable on the market, forecasts are used based on comparable financial instruments which are traded in an active market; these forecasts are then adjusted by premiums or discounts on the basis of historical data. The mean value of bid and offer rates is used. Trades for which no premium has been paid have a fair value of zero upon conclusion. DB AG operates with long-dated financial derivatives on a hedged basis, and does not perform any credit risk adjustment for *the present value for hedged transactions. For considerations of materiality, no credit risk adjustment is used for current derivatives. If credit risk adjustment is used, the relevant discounts are derived from the credit default swap (CDS) figures observable on the market.*

All derivatives used in DB Group are measured using common methods such as option price or present value models, because their fair values are not traded on an active market. No parameters from non-observable markets are used for measurement purposes.

The volume of hedges which have been taken out is shown in the following overview of nominal values:

	Nominal values of the hedged liabilities			
As of Dec 31 (€ million)	2018	Remaining term up to 1 year	Remaining term more than 1 year	2017
INTEREST-BASED CONTRACTS				
Interest swaps	92	0	92	100
	92	**0**	**92**	**100**
CURRENCY-BASED CONTRACTS				
Currency swaps	796	796	0	925
Currency forwards	1,683	1,636	48	1,471
Cross-currency swaps	6,061	248	5,813	5,545
	8,540	**2,680**	**5,861**	**7,941**

	Volume			
As of Dec 31 (1,000 t)	2018	Remaining term up to 1 year	Remaining term more than 1 year	2017
OTHER CONTRACTS				
Diesel	962	126	836	1,117
Hard coal	4,116	1,284	2,832	60

The volume of interest rate swaps declined to € 92 million; no new business was transacted. The changes in holdings of currency swaps and forwards vary in line with the corresponding hedging requirements of the subsidiaries. In the year under review, the nominal value of the cross-currency swaps increased by € 516 million to € 6,061 million, because the year under review saw the issue of foreign currency bonds whose cash flows were swapped into euros.

The volume of diesel derivatives declined by 0.1 million t to 1.0 million t as the volume of the expiring transactions exceeded the new transactions. The volume of coal hedges has increased considerably as of December 31, 2018 by about 4.0 million t to 4.1 million t due to a higher hedging preference.

The following table shows the average hedging prices/hedging rates for the main derivative hedging instruments of DB Group (per currency) in the year under review:

	Hedging price		Hedging rate			
Currency	Diesel	Hard coal	Cross-currency swaps (CCS)	Interest rate swaps (IRS)	Currency swap	Currency forward
EUR	533.51	66.40	–	0.04	–	–
USD	–	–	1.27	–	1.15	1.15
GBP	381.91	–	0.87	–	0.90	0.90
CHF	–	–	1.22	–	–	1.13
JPY	–	–	117.50	–	–	127.52
AUD	–	–	1.52	–	–	1.60
HKD	–	–	–	–	9.02	8.93
NOK	–	–	8.67	–	9.94	9.88
SEK	–	–	8.99	–	–	10.31
DKK	–	–	7.46	–	–	7.47
SGD	–	–	1.63	–	1.56	1.57
NZD	–	–	1.65	–	–	1.67
PLN	1,706.00	–	4.23	–	4.47	4.29
CZK	10,853.69	–	26.26	–	–	25.79
HUF	–	–	300.20	–	–	327.67
RON	–	–	4.51	–	4.66	4.68
HRK	–	–	7.45	–	7.47	7.42
CNY	–	–	–	–	–	7.96
ILS	–	–	–	–	–	4.27
SAR	–	–	4.29	–	–	–
AED	–	–	–	–	–	4.19
QAR	–	–	–	–	–	4.39

All derivative financial instruments are marked-to-market on the reporting date. The following overview shows the structure of the item stated in the balance sheet depending on the type of underlying hedge:

	Assets		Liabilities	
As of Dec 31 (€ million)	2018	2017	2018	2017
INTEREST-BASED CONTRACTS				
Interest swaps	–	–	9	11
Interest forwards	0	–	–	–
	0	**–**	**9**	**11**
CURRENCY-BASED CONTRACTS				
Currency swaps	1	1	5	3
Currency forwards	4	5	6	5
Other currency derivatives	0	0	0	0
Cross-currency swaps	202	126	326	316
thereof effects from currency hedges	199	119	222	194
	207	**132**	**337**	**324**
OTHER CONTRACTS				
Energy price derivatives	56	47	45	47
	56	**47**	**45**	**47**
Total	**263**	**179**	**391**	**382**
Interest-based contracts	–	–	9	11
Currency-based contracts	168	113	326	296
Other contracts	48	47	37	34
Non-current portion	**216**	**160**	**372**	**341**
Current portion	47	19	19	41

Cash flow hedges

In order to minimize the interest rate and exchange rate risk, foreign currency issues as well as intra-Group foreign currency loans within the Group are in principle translated into euros, and floating-rate financial liabilities are generally converted into fixed-income financial liabilities. Energy price hedging is intended to reduce price fluctuations attributable to energy sourcing.

The negative valuation of the interest rate swaps is still due to a continuous decline in the level of interest rates since the transactions were concluded. The development in the value of the cross-currency swaps is mainly attributable to the weakening of the euro against the Swiss franc and the Japanese yen, partially offset by the strengthening against the British pound and Australian dollar.

The positive market value of the energy price derivatives reflects the development on the underlying raw materials markets.

The market values of the cash flow hedges are shown as follows under assets and liabilities:

	Assets		Liabilities	
As of Dec 31 (€ million)	2018	2017	2018	2017
INTEREST-BASED CONTRACTS				
Interest swaps	–	–	9	11
	–	**–**	**9**	**11**
CURRENCY-BASED CONTRACTS				
Currency swaps	1	1	5	3
Cross-currency swaps	202	126	291	277
	203	**127**	**296**	**280**
OTHER CONTRACTS				
Energy price derivatives	56	47	45	47
Miscellaneous/other derivatives	–	–	0	–
	56	**47**	**45**	**47**
Total	**259**	**174**	**350**	**338**
Interest-based contracts	–	–	9	11
Currency-based contracts	167	113	291	256
Other contracts	48	47	37	34
Non-current portion	**215**	**160**	**337**	**301**
Current portion	44	14	13	37

Cash flow hedges are not classified under any category of IFRS 9.

The hedged cash flows of the underlyings will probably materialize, and have an impact on the income statement, in the years 2019 to 2032 (interest payments and payments of principal) or in the years 2019 to 2025 (payments for energy).

Details for hedges and underlyings in accordance with IFRS 9

	2018		31.12.2018
(€ million)	Change in hedges	Change in underlyings	Status of hedging cash flow hedges
INTEREST-BASED CONTRACTS			
Interest swaps	+2	–	–6
CURRENCY-BASED CONTRACTS			
Currency swaps	–2	–	+1
Cross-currency swaps	+62	–	–112
OTHER CONTRACTS			
Energy price hedges	+11	–	+4

In the case of interest and cross-currency hedges, the effectiveness of the hedge is assessed prospectively using the critical terms match method. This method is used because the major valuation parameters of the underlying and hedges are identical. Ineffectiveness is measured as of every balance sheet date by means of the hypothetical derivative method. In this method, the development in value of the hedge which is actually taken out is compared with the development in value of a theoretical hedge in which all valuation-relevant parameters are identical to those of the underlying. The retrospective effectiveness measurement is carried out as of every balance sheet date by means of linear regression. The ineffectiveness is calculated using the dollar-offset method. Under this method, the changes in the market values of the underlying are compared with the changes in the market value of the hedging instrument. The resultant quotient determines the ineffectiveness.

The ineffectiveness of cash flow hedges of the energy price derivatives recognized in the income statement amounted to € 0 million in the year under review (previous year: € 0 million).

Non-hedge derivatives

Currency forwards taken out to hedge operations are normally classified as non-hedge derivatives.

The market values of the non-hedge derivatives are shown under assets and liabilities as follows:

	Assets		Liabilities	
As of Dec 31 (€ million)	2018	2017	2018	2017
INTEREST-BASED CONTRACTS				
Interest forwards	–	–	–	–
	–	**–**	**–**	**–**
CURRENCY-BASED CONTRACTS				
Currency forwards	4	5	6	5
Cross-currency swaps	–	–	35	39
	4	**5**	**41**	**44**
OTHER CONTRACTS				
Energy price derivatives	0	0	–	–
	0	**0**	**–**	**–**
Total	**4**	**5**	**41**	**44**
Currency-based contracts	1	0	35	40
Non-current portion	**1**	**0**	**35**	**40**
Current portion	3	5	6	4

The cross-currency swaps are based on a redesignation of hedges as a result of the transfer of transactions between banks. The conditions including the cash flows of the derivatives were unchanged and the economic hedge is thus still in place. The slight decline is attributable to the reversal of the redesignated amounts in line with the remaining maturities of the swaps.

The non-hedge derivatives are classified under the category held-for-trading of IFRS 9.

The financial instruments recognized at fair value are classified under valuation level 2 and to a lesser extent under valuation level 1.

As of Dec 31 (€ million)	2018 Level 1	2018 Level 2	2018 Level 3	2018 Total	2017 Level 1	2017 Level 2	2017 Level 3	2017 Total
ASSETS								
Available-for-sale financial assets (securities at fair value)	2	–	–	**2**	2	–	–	**2**
Derivatives – non-hedging	–	4	–	**4**	–	5	–	**5**
Derivatives – hedging	–	259	–	**259**	–	174	–	**174**
Total	**2**	**263**	**–**	**265**	**2**	**179**	**–**	**181**
LIABILITIES								
Derivatives – non-hedging	–	41	–	**41**	–	44	–	**44**
Derivatives – hedging	–	350	–	**350**	–	338	–	**338**
Total	**–**	**391**	**–**	**391**	**–**	**382**	**–**	**382**

There have been no reclassifications between the valuation levels in the year under review.

For establishing the fair values of the derivative financial instruments, the contractually agreed or most probable cash flows are discounted using the appropriate market interest rate, whereby due consideration is given to the credit risk by means of credit spreads. No credit risk mark-downs have been recognized in the case of secured exposures. The credit risk resulting from the derivative portfolio is treated on a net basis. Credit support annexes, which are subject to daily security settlement with a threshold value of € 0, were concluded to minimize the credit risk of long-term interest and cross-currency transactions.

(22) Cash and cash equivalents

This item comprises cash in hand and checks, deposits at banks which are due on sight, as well as cash equivalents. Cash at banks comprises overnight money as well as time deposits (including repurchase agreements (repos)) due within three months.

Cash and cash equivalents are recognized with their nominal value (at amortized cost).

Cash and cash equivalents are broken down as follows:

As of Dec 31 (€ million)	2018	2017
Cash in hand and cash at banks	3,543	3,396
Cash equivalents	1	1
Total	**3,544**	**3,397**
Effective interest rate on short-term bank deposits (%)	-0.20	-0.16
Average term of short-term bank deposits (months)	0.4	0.4

The interest rates for current bank deposits were in a range of between −0.60% and 0.19% (previous year: between −0.55% to 0.18%) and relate to investments in euros. The maturities of the investments are between one day and three months.

With regard to cash and cash equivalents, please refer to section **"Notes to the statement of cash flow" 227.**

(23) Assets available for sale

Under IFRS 5, non-current assets are classified as held-for-sale non-current assets if their carrying amount is to be realized by way of sale and not by way of continued use. This can be an individual asset, a disposal group or part of a company. Non-current held-for-sale assets are stated with the lower of carrying amount or market value less costs which are incurred.

The disclosure relates to GHT Mobility GmbH, Berlin, in which DB Group acquired a majority of shares in the year under review by way of several tranches. The simplified method according to IFRS 5, IG example 13, was used for integrating the company.

(24) Subscribed capital

The share capital of DB AG is € 2,150 million. It consists of 430,000,000 no-par-value bearer shares. All shares are held by the Federal Republic of Germany.

(25) Reserves

a) Capital reserves

Capital reserves comprise reserves which have not been part of profits.

b) Reserve resulting from valuation with no impact on the income statement

Reserve for currency translation differences

The currency translation differences resulting from the method of functional currency (IAS 21) are shown separately as part of consolidated shareholders' equity.

Reserve for market valuation of securities

The reserve includes the changes in the market value of financial instruments to be recognized directly in equity. The reserve has to be reversed to the income statement or eliminated when a financial instrument is sold, became due or was reclassified.

In the year under review, the measurement of financial instruments directly in equity has not resulted in the creation of any deferred tax assets (as of December 31, 2017: none).

Reserve attributable to the market valuation of cash flow hedges

The development in the reserve is shown in the following:

(€ million)	2018	2017
As of Jan 1	-121	-168
Change in market value	90	-368
Reclassifications		
Financial result	-59	344
Net interest income	3	24
Cost of materials	-18	51
Changes in deferred taxes	-1	-4
As of Dec 31	**-106**	**-121**

Reserve for the revaluation of pensions

The effects resulting from the revaluation of defined benefit plans in accordance with IAS 19 (Employee Benefits) are recognized directly in equity.

Other changes in the reserves

This item mainly shows amounts resulting from transactions in relation to reductions or increases in non-controlling interests between the shareholders of DB AG and the non-controlling interests.

(26) Retained earnings

The generated shareholders' equity comprises the entire net profits generated since January 1, 1994 less the goodwill offset under HGB up to December 31, 2002 as well as the dividends paid to the shareholder.

This item also shows the impact on shareholders' equity attributable to the first-time adoption of IFRS if they are not included in the reserves attributable to valuation with no impact on the income statement.

(27) Non-controlling interests

Non-controlling interests comprise the share of third parties in the net assets of consolidated subsidiaries. Third-party interests in the currency reserve amount to € -8 million (as of December 31, 2017: € -6 million).

(28) Financial debt

Liabilities are normally recognized in accordance with IFRS 9 with their nominal amount, which corresponds to the fair value at the point at which the liability is initially recognized and the amortized costs of purchase up to the date at which the liability is settled. Financial debt and other non-current liabilities, when initially recognized, are stated with the amount which corresponds to the fair value of the received assets, where appropriate less transaction costs. Subsequently, they are stated using amortized costs of purchase using the effective interest method. The differences between the amount paid out less transaction costs and the amount repaid are recognized in the income statement over the life of the liability.

Interest-free loans which are related to infrastructure capital expenditures are recognized with the present value of the amounts to be repaid, and are adjusted to their nominal repayment amount over their life. The difference between the nominal amount of the loan and the present value is recognized as an interest benefit under deferred items. The income from pro rata reversal of these deferred items is shown as other operating income.

Liabilities arising from leases which are classified as finance leases in accordance with the allocation criteria of IAS 17 are recognized at the lower of fair value and the present value of minimum leasing payments at the beginning of the lease, and are subsequently stated under financial debt in the amount of amortized cost of purchase. The leasing installments are broken down into an interest component and a repayment component. The interest component of the leasing installment is recognized in the income statement. Liabilities arising from finance leases are not classified under any category of IFRS 9.

Some transport contracts comprise the leasing particularly of rail vehicles from the public sector or from independent financial service providers, whereby the latter receive a capital service guarantee, a redeployment guarantee or similar from the public transport authority. The present value of these payment obligations is shown under the financing liabilities from transport concessions.

The financial debt comprises all interest-bearing liabilities including the interest-free loans stated with their present values. The maturity structure of financial debt is as follows:

(€ million)	Residual maturity Up to 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	More than 5 years	Total more than 1 year	Total
AS OF DEC 31, 2018								
Interest-free loans	174	153	140	134	128	122	**677**	**851**
Bonds	1,958	2,137	1,804	1,544	1,916	11,353	**18,754**	**20,712**
Bank borrowings	240	4	1	400	0	1	**406**	**646**
EUROFIMA loan	–	–	200	–	–	–	**200**	**200**
Finance lease liabilities	44	43	59	36	41	339	**518**	**562**
Finance liabilities from transport concessions	6	6	6	7	7	13	**39**	**45**
Other financial liabilities	196	24	1	0	6	1	**32**	**228**
Total	**2,618**	**2,367**	**2,211**	**2,121**	**2,098**	**11,829**	**20,626**	**23,244**
thereof due to related companies	186	153	341	134	128	122	**878**	**1,064**
AS OF DEC 31, 2017								
Interest-free loans	200	167	146	134	128	239	**814**	**1,014**
Bonds	1,900	1,940	2,085	1,809	1,547	10,335	**17,716**	**19,616**
Bank borrowings	121	5	2	2	400	1	**410**	**531**
EUROFIMA loan	–	–	–	200	–	–	**200**	**200**
Finance lease liabilities	75	33	33	42	28	290	**426**	**501**
Finance liabilities from transport concessions	6	6	6	6	7	21	**46**	**52**
Other financial liabilities	58	102	0	1	0	1	**104**	**162**
Total	**2,360**	**2,253**	**2,272**	**2,194**	**2,110**	**10,887**	**19,716**	**22,076**
thereof due to related companies	208	167	146	335	128	239	**1,015**	**1,223**

The following fair values are summarized compared with the carrying amounts:

As of Dec 31 (€ million)	2018 Carrying amount	2018 Fair value	2017 Carrying amount	2017 Fair value
Interest-free loans	851	955	1,014	1,152
Bonds	20,712	21,722	19,616	20,921
Bank borrowings	646	647	531	532
EUROFIMA loan	200	223	200	229
Finance lease liabilities	562	712	501	647
Financing liabilities from transport concessions	45	47	52	53
Other financial liabilities	228	229	162	172
Total	**23,244**	**24,535**	**22,076**	**23,706**

The differences between the carrying amounts and the fair values of the financial debt are due to the usually changed market interest rates for financial debt with a comparable risk profile. In view of the short maturities involved and also in view of the fact that interest charged is closely linked to market rates, there are no significant differences between the carrying amounts and the fair values of other financial liabilities.

Interest-free loans are attributable almost exclusively to financing provided by the Federal Government for capital expenditures in expanding and replacing track infrastructure. This is based on the responsibility for the transport needs of the public which is anchored in section 87e (4) of the Basic Law (Grundgesetz; GG) and specified in the Federal Rail Infrastructure Extension Act (Bundesschienenwegeausbaugesetz; BSWAG).

The arrangements for repaying the loans are detailed in individual and collective financing agreements. In general, the loans are repaid in equal annual installments, which are based on the corresponding annual depreciation applicable for the financed assets.

Interest-free loans have developed as follows:

(€ million)	2018	2017
As of Jan 1	1,014	1,172
Redemption	-204	-206
Reclassifications	–	–
Compounding	41	48
As of Dec 31	**851**	**1,014**

The issued bonds consist of the following transactions:

Bonds as of Dec 31 (€ million)	Issue volume	Issue currency	Residual maturity (years)	Effective interest rate (%)	2018 Carrying amount	2018 Fair value	2017 Carrying amount	2017 Fair value
UNLISTED BONDS								
DB Finance	973	AUD, JPY, EUR	0.8 - 13.8		931	994	731	784
					931	**994**	**731**	**784**
LISTED BONDS OF DB FINANCE								
Bond 2003 - 2018	1,000	EUR	0.0	5.000	-	-	1,000	1,010
Bond 2004 - 2018	300	EUR	0.0	4.850	-	-	300	303
Bond 2006 - 2018	300	EUR	0.0	4.510	-	-	300	303
Bond 2007 - 2019	600	EUR	0.6	5.110	600	617	599	649
Bond 2009 - 2019	1,000	EUR	0.2	4.923	1,000	1,009	999	1,061
Bond 2009 - 2021	600	EUR	2.7	4.445	599	669	599	697
Bond 2010 - 2020	500	EUR	1.4	3.572	500	526	499	545
Bond 2010 - 2025	500	EUR	6.5	3.870	497	597	496	618
Bond 2010 - 2020	410	JPY	1.8	1.150	374	381	349	358
Bond 2010 - 2022	500	EUR	3.8	3.464	498	562	498	578
Bond 2010 - 2020	567	CHF	1.4	1.924	664	686	638	675
Bond 2011 - 2021	700	EUR	2.4	3.797	699	765	699	791
Bond 2012 - 2022	496	GBP	3.5	2.821	446	468	449	482
Bond 2012 - 2023	400	EUR	4.1	2.116	398	431	398	436
Bond 2012 - 2024	83	CHF	5.1	1.586	88	96	85	93
Bond 2012 - 2024	500	EUR	5.2	3.119	497	567	497	580
Bond 2012 - 2072	75	GBP	53.9	4.524	67	105	67	110
Bond 2013 - 2018	300	EUR	0.0	FRN	-	-	300	300
Bond 2013 - 2028	50	EUR	9.1	2.707	50	58	50	58
Bond 2013 - 2025	202	NOK	6.2	4.017	151	166	152	172
Bond 2013 - 2023	386	CHF	4.6	1.425	421	452	405	439
Bond 2013 - 2026	497	GBP	7.6	3.351	468	518	471	534
Bond 2013 - 2023	500	EUR	4.7	2.578	498	553	498	560
Bond 2013 - 2020	300	EUR	1.8	1.899	299	311	298	316
Bond 2013 - 2019	186	USD	0.2	FRN	218	218	208	208
Bond 2014 - 2024	59	AUD	5.1	5.395	55	61	59	64
Bond 2014 - 2021	142	SEK	2.1	2.940	122	128	127	135
Bond 2014 - 2021	40	SEK	2.1	FRN	34	34	36	36
Bond 2014 - 2019	73	SGD	0.1	2.338	80	80	78	78
Bond 2014 - 2024	246	CHF	5.7	1.522	266	290	256	282
Bond 2014 - 2029	500	EUR	10.2	2.886	494	581	493	588
Bond 2014 - 2020	300	EUR	1.6	FRN	300	301	300	302
Bond 2014 - 2022	300	EUR	3.7	FRN	300	302	300	304
Bond 2014 - 2022	300	EUR	3.1	FRN	300	302	300	303
Bond 2015 - 2023	600	EUR	4.8	FRN	599	605	599	610
Bond 2015 - 2025	600	EUR	6.8	1.391	595	628	594	630
Bond 2015 - 2030	366	NOK	11.8	2.760	341	344	345	350
Bond 2015 - 2025	115	AUD	6.8	3.864	110	117	116	120
Bond 2015 - 2030	650	EUR	11.8	1.707	644	678	644	685
Bond 2015 - 2025	161	CHF	6.9	0.143	155	155	149	150
Bond 2016 - 2026	500	EUR	7.2	0.880	496	503	495	509
Bond 2016 - 2031	750	EUR	12.5	0.964	742	709	742	713
Bond 2016 - 2021	350	EUR	2.5	0.040	350	350	350	349
Bond 2016 - 2028	500	EUR	9.7	0.765	493	487	493	487
Bond 2016 - 2024	41	HKD	5.2	2.100	39	37	37	36
Bond 2017 - 2032	79	NOK	13.1	2.514	70	68	71	71
Bond 2017 - 2032	500	EUR	13.9	1.541	497	504	497	510
Bond 2017 - 2025	341	GBP	6.5	1.437	334	328	337	335
Bond 2017 - 2032	55	SEK	13.6	2.226	52	51	54	52
Bond 2017 - 2030	261	CHF	11.9	0.463	266	262	256	257
Bond 2017 - 2024	300	EUR	5.9	FRN	303	301	303	305
Bond 2018 - 2027	1,000	EUR	9.0	1.086	993	1,013	-	-
Bond 2018 - 2033	750	EUR	14.6	1.680	745	765	-	-
Bond 2018 - 2028	346	CHF	9.6	0.470	356	359	-	-
Bond 2018 - 2031	500	EUR	12.2	1.508	493	505	-	-
Bond 2018 - 2043	125	EUR	24.9	1.867	125	125	-	-
Total					**19,781**	**20,728**	**18,885**	**20,137**
Total amount bonds					**20,712**	**21,722**	**19,616**	**20,921**

FINANCIAL STATEMENTS

SUSTAINABILITY

In the year under review, one fixed-income listed bond of Deutsche Bahn Finance GmbH (DB Finance) for € 1,600 million (issued in three tranches: € 1,000 million and two issues of € 300 million) and a variable-interest listed bond for € 300 million were repaid on schedule.

DB Finance also issued six bonds and topped up an existing bond. The transactions had a total value of € 2,948 million. They comprised five fixed-income listed bonds of € 1,000 million, € 750 million, CHF 400 million (€ 346 million), € 500 million and € 125 million as well as one fixed-income unlisted bond for AUD 206 million (€ 133 million). One fixed-income unlisted bond was topped up by AUD 150 million (€ 94 million).

Bank borrowings are detailed in the following table:

Bank borrowings as of Dec 31 (€ million)	Currency	Residual maturity (years)	Nominal interest rate (%)	**2018** Carrying amount	**2018** Fair value	2017 Carrying amount	2017 Fair value
Bank loan 2002–2022	EUR	3.7	FRN	200	200	200	200
Bank loan 2003–2022	EUR	3.7	FRN	200	200	200	200
Other				246	247	131	132
Total				**646**	**647**	**531**	**532**

The increase in other bank borrowings is mainly attributable to an increase in short-term collateral (€ 114 million; previous year; € 61 million) resulting from collateral agreements within the framework of derivative transactions.

Liabilities are not secured in DB Group in principle.

As of December 31, 2018, guaranteed credit facilities with a total volume of € 4,561 million (as of December 31, 2017: € 4,292 million) were available to DB Group. Of this figure, € 2,080 million (as of December 31, 2017: € 2,080 million) was attributable to back-up lines for the € 2.0 billion commercial paper program of DB AG and DB Finance. None of these back-up lines had been drawn down as of December 31, 2018. Global credit facilities totaling € 2,481 million (as of December 31, 2017: € 2,212 million) are used for working capital and surety for payment financing of subsidiaries with worldwide operations, primarily in the segments DB Schenker and DB Arriva.

The liabilities due to EUROFIMA are detailed in the following:

Liabilities due to EUROFIMA as of Dec 31 (€ million)	Currency	Residual maturity (years)	Nominal interest rate (%)	**2018** Carrying amount	**2018** Fair value	2017 Carrying amount	2017 Fair value
Loan 2010 – 2021	EUR	2.8	4.050	200	223	200	229
Total				**200**	**223**	**200**	**229**

No new EUROFIMA loans were raised. The liabilities due to EUROFIMA are secured by way of transfer of ownership of rolling stock in view of the statutes of EUROFIMA.

Of the figure shown for liabilities from finance leases, € 19 million (as of December 31, 2017: € 22 million) related to a real estate lease for a concourse building of DB Station&Service AG.

The mobile asset lease for rail cars was repaid on schedule at the end of the year under review. These agreements have been concluded mainly as sale-and-leaseback transactions for achieving advantageous financing conditions with German lessors.

The following table provides information concerning the main finance leases:

As of Dec 31 (€ million)	Nominal volume	Currency	Residual maturity (years)	Nominal interest rate (%)	**2018** Carrying amount	**2018** Fair value	2017 Carrying amount	2017 Fair value
FINANCE LEASES MOBILE ASSETS								
Diesel rail cars for regional transport (2009)	55	EUR	0.0	8.34	0	0	44	47
					0	**0**	**44**	**47**
FINANCE LEASES REAL ESTATE								
Concourse buildings (1998)	254	EUR	3.0	5.550	19	21	22	24
					19	**21**	**22**	**24**
Other					543	691	435	576
Total					**562**	**712**	**501**	**647**

The finance lease agreement for the concourse building of DB Station&Service AG has a remaining term of three years, and cannot be terminated during the fixed lease. At the end of the lease, the lessee is able to buy the assets for a fixed price. If this option is not exercised, the lease is extended for a second period, at the end of which the lessor has a put option for the property with regard to DB Station&Service AG.

In addition, liabilities attributable to finance leases **(Note (13) 202 ff.)** are secured by rights of the lessors in relation to the leased assets. The leased assets have a carrying amount of € 582 million (as of December 31, 2017: € 550 million).

The position Other comprises numerous Europe-wide leases for buses and trains at DB Arriva and the carrying amount of a power procurement agreement of DB Energie GmbH worth € 58 million (as of December 31, 2017: € 67 million) as well as the carrying amount of an inverter agreement of DB Energie GmbH in the amount of € 28 million (as of December 31, 2017: € 32 million). Both agreements are classified as embedded financial leases as a result of the fact that the power is procured primarily by DB Energie GmbH and also in view of the underlying agreement duration in accordance with IFRIC 4 in conjunction with IAS 17.

The increase in the item Other is attributable to the acquisition of finance leases for buses in the amount of € 51 million as a result of the purchase of VT-Arriva as well as a contract prolongation ahead of schedule (€ 41 million) and also a reclassification within the framework of a contract prolongation (€ 38 million) for two existing properties. On the other hand, the financing volume declined due to scheduled repayments.

In the subsequent years, the following payments have to be made in connection with finance leases:

Liabilities from finance leases (€ million)	Residual maturity: Less than 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	More than 5 years	Total more than 1 year	Total
AS OF DEC 31, 2018								
Minimum lease payments (nominal)	63	61	75	50	54	497	**737**	**800**
Less future interest charges	19	18	16	14	13	158	**219**	**238**
Total	**44**	**43**	**59**	**36**	**41**	**339**	**518**	**562**
AS OF DEC 31, 2017								
Minimum lease payments (nominal)	96	50	48	56	40	450	**644**	**740**
Less future interest charges	21	17	15	14	12	160	**218**	**239**
Total	**75**	**33**	**33**	**42**	**28**	**290**	**426**	**501**

The finance liabilities from transport concessions in accordance with IFRIC 12 are detailed in the following:

Finance liabilities from transport concessions as of Dec 31 (€ million)	Currency	Residual maturity (years)	Nominal interest rate (%)	2018 Carrying amount	2018 Fair value	2017 Carrying amount	2017 Fair value
Freight locomotives (2016)	EUR	7.0	1.06	36	38	42	43
Rail cars (2016)	EUR	7.0	1.06	9	9	10	10
Total				**45**	**47**	**52**	**53**

In order to enable the company to meet its obligations with regard to providing regional rail passenger transport services in the Schleswig-Holstein network, various locomotives and rail cars were leased by the relevant contracting organization over the entire term of the transport contract of nine years. The finance liabilities from transport concessions are opposed by receivables from transport concessions **(Note (19) 207 ff.).**

The fair values of the non-current financial debt are allocated to the following valuation categories:

As of Dec 31 (€ million)	2018 Level 1	2018 Level 2	2018 Level 3	2018 Total	2017 Level 1	2017 Level 2	2017 Level 3	2017 Total
NON-CURRENT FINANCIAL DEBT								
Interest-free loans	–	781	–	**781**	–	952	–	**952**
Bonds	2,642	17,095	–	**19,737**	1,902	17,104	–	**19,006**
Bank borrowings	–	407	–	**407**	–	411	–	**411**
EUROFIMA loan	–	223	–	**223**	–	229	–	**229**
Finance lease liabilities	–	668	–	**668**	–	572	–	**572**
Finance liabilities from transport concessions	–	41	–	**41**	–	47	–	**47**
Other financial liabilities	–	33	–	**33**	–	114	–	**114**
Total	**2,642**	**19,248**	**–**	**21,890**	**1,902**	**19,429**	**–**	**21,331**

The interest-free loans shown at amortized cost are established by discounting the nominal values of the interest-free loans broken down into maturity buckets using the DB interest curve (market interest curve plus current DB spread; source: Thomson Reuters or Bloomberg) and a term until 2024.

Market prices from an active market, multiplied by the foreign currency rates applicable on the balance sheet date, are used for bonds of DB Finance which are classified as level 1. Various sources are used for these prices, including Thomson Reuters and Bloomberg. The bonds for which the market activity does not comply with the requirements of an active market have been allocated to level 2. For establishing the market prices of these bonds, binding offers were used from various sources, including Thomson Reuters and Bloomberg; these have been verified on the basis of the valuation models using the parameters which are observable on the market, such as interest rate curves and exchange rates.

Theoretical refinancing via bonds of DB Finance are assumed for assessing the market value of outstanding EUROFIMA loans. A discounted cash flow method is used for calculation purposes. The reference interest rate which is used is established by interpolation of the yields for matching maturities of bonds of DB Finance.

The fair value of the finance leases as well as finance liabilities from transport concessions is calculated by discounting the outstanding leasing payments using the DB interest curve (market interest curve plus current DB spread; source: Thomson Reuters or Bloomberg).

(29) Other liabilities

Liabilities are normally recognized in accordance with IFRS 9 with their nominal amount, which corresponds to the fair value at the point at which the liability is initially recognized and the amortized costs of purchase up to the date at which the liability is settled, where applicable less transaction costs. Subsequently, non-current liabilities are stated using amortized costs of purchase using the effective interest method. The differences between the amount paid out less transaction costs and the amount repaid are recognized in the income statement over the life of the liability.

The fair values of the balance sheet items other liabilities, trade liabilities and other liabilities essentially correspond to the carrying amounts.

Severance package obligations for agreements agreed as of the balance sheet date are recognized as other liabilities and – if they are not yet included in individual agreements and if they are part of a restructuring obligation in accordance with IAS 37 – are stated as other provisions.

Movements in other liabilities are shown in the following:

(€ million)	Residual maturity: Up to 1 year	1 to 2 years	2 to 3 years	3 to 4 years	4 to 5 years	More than 5 years	Total more than 1 year	Total
AS OF DEC 31, 2018								
Trade liabilities including received prepayments	5,491	116	14	15	9	13	**167**	**5,658**
Miscellaneous other liabilities	3,660	10	7	7	6	61	**91**	**3,751**
Total	**9,151**	**126**	**21**	**22**	**15**	**74**	**258**	**9,409**
thereof non-financial liabilities	2,306	24	2	1	2	11	**40**	**2,346**
thereof received prepayments	219	24	2	1	2	11	**40**	**259**
thereof due to related parties	323	0	0	0	0	0	**0**	**323**
AS OF DEC 31, 2017								
Trade liabilities including received prepayments	5,157	59	57	13	10	20	**159**	**5,316**
Miscellaneous other liabilities	3,399	13	9	6	7	39	**74**	**3,473**
Total	**8,556**	**72**	**66**	**19**	**17**	**59**	**233**	**8,789**
thereof non-financial liabilities	1,998	30	24	2	1	12	**69**	**2,067**
thereof received prepayments	177	30	24	2	1	12	**69**	**246**
thereof due to related parties	222	0	0	0	0	0	**0**	**222**

Non-financial liabilities and received prepayments are not classified under any category of IFRS 9.

The miscellaneous other liabilities comprise the following:

As of Dec 31 (€ million)	2018	2017
PERSONNEL-RELATED LIABILITIES		
Unused holiday entitlements	368	339
Outstanding overtime	279	248
Social security	118	115
Severance payments	25	25
Christmas bonuses	8	6
Holiday pay	24	17
Other personnel obligations	889	741
OTHER TAXES		
Value-added tax	97	56
Payroll and church taxes, solidarity surcharge	139	148
Miscellaneous other taxes	140	125
Interest payable	206	257
Revenue reductions	62	114
Deferred construction grants	277	185
Liabilities due to Railway Crossings Act	3	2
Reconveyance obligations	4	4
Miscellaneous other liabilities	1,112	1,091
Total	**3,751**	**3,473**

The other personnel obligations also include bonus obligations.

As of December 31, 2018, other liabilities were secured in an amount of € 0 million (as of December 31, 2017: € 0 million).

The miscellaneous other liabilities include existing risks for factoring agreements.

(30) Income tax liabilities

The income tax liabilities as of December 31, 2018 related mainly to obligations to the fiscal authorities in Great Britain, the USA and Germany.

(31) Additional disclosures relating to the financial instruments

If covered by the scope of IFRS 9, the financial assets and liabilities are categorized and measured in accordance with IFRS 9. Financial assets and liabilities which are not covered by the scope of IFRS 9 are measured in accordance with the relevant standards and not categorized under any measurement category according to IFRS 9.

The carrying amounts as well as the net result per valuation category of IFRS 9 are shown in the following. The fair values and the details of individual classes of financial instruments are shown within the notes to the respective balance sheet items.

In DB Group, financial assets which are allocated to a valuation category according to IFRS 9 mainly comprise trade receivables and cash and cash equivalents.

In DB Group, financial liabilities which are allocated to a valuation category according to IFRS 9 mainly comprise interest-free loans, bonds, EUROFIMA loans, bank borrowings, trade payables and other liabilities.

a) Classification of financial assets

Due to **first-time adoption of IFRS 9** **188**, the number of categories previously applicable under IAS 39 has been reduced from four to three. The previous category "Available for sale" has been transferred to the category "Fair value through profit or loss" (€ 24 million) and the category "Fair value through other comprehensive income" (€ 14 million). The reclassification has not had any impact on results. A distinction is still made as to whether the valuation effects from other comprehensive income are reclassified to the income statement or remain in shareholders' equity.

	Fair value (through profit or loss)	Fair value (through other comprehensive income)	Amortized cost of purchase
Financial assets as of December 31, 2017	5	2	9,333
Reclassification of other investments	+24	+14	-38
Reclassification of receivables earmarked for factoring	+353	–	-353
Financial assets as of Jan 1, 2018	**382**	**16**	**8,942**

The valuation categories of IFRS 9 are set out in the following:

	Fair value through profit or loss		Fair value through other comprehensive income with recycling		Fair value through other comprehensive income without recycling		Derivatives in hedges		At amortized cost of purchase		Not covered by scope of IFRS 7		**Total**	
(€ million)	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	2017	**2018**	**2017**
CARRYING AMOUNT AS OF DEC 31														
Non-current financial assets	17	0	1	2	28	–	215	160	295	282	85	58	**641**	**502**
Current financial assets	598	358	1	0	–	–	44	14	9,207	8,698	600	538	**10,450**	**9,608**
Non-current financial liabilities	35	40	–	–	–	–	337	301	20,326	19,454	558	495	**21,256**	**20,290**
Current financial liabilities	6	4	–	–	–	–	13	37	9,419	8,843	2,355	2,073	**11,793**	**10,957**
Net result	-1	6	–	–	–	–	–	–	30	20	-531	-632	**-502**	**-606**

Since the year under review, and following the first-time adoption of IFRS 9 in DB Group, other participations have been measured at fair value and not, as previously, classified under the category "Available for sale."

There have also been changes in relation to trade receivables which are sold on within the framework of factoring agreements and which have previously been classified under the category "At amortized cost of purchase"; these have now been classified under the category "Fair value through profit or loss."

The net result according to valuation categories in particular includes interest income of € 18 million (previous year: € 34 million) as well as interest expenses of € 516 million (previous year: € 595 million) relating to the financial assets and liabilities which are not measured at fair value through profit or loss.

b) Hedge accounting

With regard to the recognition of hedges, there have been additions in the field of designation possibilities as well as a closer link between hedge accounting and risk management. There is also the need to implement extended accounting and measurement logic. In DB Group, this is relevant particularly for a differentiated treatment of the currency basis spreads which, under IFRS 9, will not be an element of the underlying of a hedge. Any resultant ineffectiveness is, where necessary, recognized in the income statement. With IFRS 9, the quantitative limits for the effectiveness test are no longer applicable.

(32) Pension obligations

DB Group grants post-employment benefits to its employees in numerous countries. The form of the pension commitments depends on the legal, economic and tax conditions applicable in the particular country.

In DB Group, there are defined benefit as well as defined contribution retirement pension schemes. The defined benefit commitments are accounted for in accordance with IAS 19. Major pension obligations exist only in Germany and in Great Britain. For this reason, only these pension obligations are described in greater detail in the following.

Germany

Pension obligations of DB Group in Germany comprise pension obligations for civil servants and also for employees.

After they retire, civil servants assigned to the companies of DB Group receive pensions from the BEV under the Civil Servants Benefits Act (Beamtenversorgungsgesetz).

Only while the assigned civil servants are actively working for DB Group are payments made to the Federal Railroad Fund as part of a pro forma settlement in the same way as for newly recruited employees (section 21 (1) DBGrG). This also includes theoretical amounts for contributions to statutory pension insurance schemes as well as theoretical costs in accordance with the collective bargaining agreement regarding the additional company pension scheme for employees of DB AG (Tarifvertrag über die betriebliche Zusatzversorgung für die Arbeitnehmer der DB AG; ZVersTV). The payments made to the Federal Railroad Fund for retirement pensions and supplementary benefits of civil servants are defined contribution retirement schemes.

The pension obligations with regard to employees mainly relate to the following:

a) Employees who were employed by DB AG before the company was established (January 1, 1994) enjoy supplementary benefits in view of their former membership of the public sector. The employees are entitled to benefits from this additional pension insurance from German Pension Fund Knappschaft-Bahn-See (KBS). As an official authority, KBS has not only assumed responsibility for managing and paying the statutory pension for DB Group employees; it also continues the additional pension insurance for the transferred employees who are beneficiaries.

The Federal Railroad Fund bears the costs of these additional benefits, less the contribution made by the employees themselves (section 14 (2) DBGrG). Accordingly, DB AG does not set aside any provisions for these public sector benefits.

b) Employees of the former Deutsche Reichsbahn and the employees who have been recruited after January 1, 1994 receive an additional company pension from DB AG within the framework of the ZVersTV. This supplementary company pension is a defined benefit scheme, which is linked to salary and length of service. The current pension benefits are adjusted every year in line with the regulations of the Company Pensions Act (Betriebsrentengesetz). Retirement benefits, invalidity benefits and benefits to surviving dependants are provided in the form of a lifetime pension. No plan assets are created for this scheme.

c) Various defined benefit pension obligations exist with regard to senior executives in DB Group who were granted a senior executive commitment before January 1, 2007. The extent of the benefits depend on the length of service and the salary of the beneficiary. In general, retirement benefits, invalidity benefits and benefits to surviving dependants are provided in the form of a lifetime pension. Apart from a small number of reinsurance policies, there are no plan assets.

d) Senior executives of DB Group who were granted a senior executive commitment after December 31, 2006, are provided with a retirement benefit scheme in the form of a defined contribution commitment. For this purpose, a benefit module is calculated in each year of service, depending on the salary and age of the beneficiary. These benefits are financed by way of a contractual trust arrangement (CTA), namely Deutsche Bahn Pension Trust e.V. The extent of the benefits depends on the yield of the CTA, whereby a minimum return is guaranteed. To avoid longevity risks, the benefits are granted in the form of a five-year installment. The assets of the CTA are classified as plan assets. The pension obligation is covered by the plan assets on the assumption that the CTA produces a corresponding performance, thus minimizing investment risks. There are no legal or regulatory obligations requiring Deutsche Bahn Pension Trust e.V. to make minimum payments into the scheme. The contributions are invested in line with the fundamental assumption that the benefit commitment is guaranteed by a corresponding guarantee element. For each payment relating to the individual beneficiary, an age-related amount is invested in prime zero bonds. The investment amount remaining after the payment has been made into the guarantee element is mainly invested in passively managed European equity and bond funds (or equivalent products) with the aim of optimizing returns.

e) Senior executives are able to participate in a deferred compensation program. This employee-financed form of company pension scheme constitutes a defined benefit obligation.

Great Britain

a) The company pension scheme of DB Cargo (UK) Holdings Limited is essentially a defined benefit pension scheme (linked to salary and length of service) within the British Railway Pension Scheme. The plan assets are managed by an independent trustee. The process of collating the data of members in the plan for the purpose of compliance with legal requirements in relation to the members of the plan is generally carried out every three years, most recently as of December 31, 2016. As of the intermediate valuation dates, the obligations in the plan are measured on the basis of the correspondingly updated data. The pension scheme is based on final salary, and lifetime pensions are provided as benefits. The pension obligations are essentially covered by plan assets. Capital is invested by the trustee of the plan assets following liaison with DB Group.