

DEUTSCHE BANK AKTIENGESELLSCHAFT

Form 20-F

March 25, 2019

As filed with the Securities and Exchange Commission on March 22, 2019

UNITED STATES

SECURITIES EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

Form 20-F

REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES
EXCHANGE ACT OF 1934

or

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE
ACT OF 1934 FOR THE FISCAL YEAR ENDED DECEMBER 31, 2018

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES
EXCHANGE ACT OF 1934

or

SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Date of event requiring this shell company report.....

Commission file number 1-15242

Deutsche Bank Aktiengesellschaft

(Exact name of Registrant as specified in its charter) Deutsche Bank Corporation

(Translation of Registrant's name into English)

Federal Republic of Germany

(Jurisdiction of incorporation or organization)

Taunusanlage 12, 60325 Frankfurt am Main, Germany

(Address of principal executive offices)

Andreas Loetscher, +49-69-910-44468, andreas.loetscher@db.com, Taunusanlage 12, 60325 Frankfurt am Main,
Germany

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act

See following page

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Securities registered or to be registered pursuant to Section 12(g) of the Act.

NONE

(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act.

NONE

(Title of Class)

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

Ordinary Shares, no par value 2,065,428,987

(as of December 31, 2018)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes No ☒

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See definition of "large accelerated filer", "accelerated filer", and emerging growth company in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer

Non-accelerated filer Emerging growth company

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards* provided pursuant to Section 13(a) of the Exchange Act.

*The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

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U.S. GAAP International Financial Reporting Standards as issued by the International Accounting Standards Board Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow

Item 17 Item 18 ☐

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No ☒

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court.

Yes No ☐

Securities registered or to be registered pursuant to Section 12(b) of the Act (as of February 28, 2019)

Title of each class	Name of each exchange on which registered
Ordinary shares, no par value	New York Stock Exchange
6.55 % Trust Preferred Securities of Deutsche Bank Contingent Capital Trust II	New York Stock Exchange
6.55 % Company Preferred Securities of Deutsche Bank Contingent Capital LLC II* Subordinated Guarantees of Deutsche Bank AG in connection with Capital Securities*	
8.05 % Trust Preferred Securities of Deutsche Bank Contingent Capital Trust V	New York Stock Exchange
8.05 % Company Preferred Securities of Deutsche Bank Contingent Capital LLC V* Subordinated Guarantees of Deutsche Bank AG in connection with Capital Securities*	
Fixed to Fixed Reset Rate Subordinated Tier 2 Notes Due 2028	New York Stock Exchange
4.50 % Fixed Rate Subordinated Tier 2 Notes Due 2025	New York Stock Exchange
DB Agriculture Long Exchange Traded Notes due April 1, 2038	NYSE Arca
DB Agriculture Double Long Exchange Traded Notes due April 1, 2038	NYSE Arca
DB Base Metals Short Exchange Traded Notes due June 1, 2038	NYSE Arca
DB Base Metals Double Short Exchange Traded Notes due June 1, 2038	NYSE Arca
DB Base Metals Double Long Exchange Traded Notes due June 1, 2038	NYSE Arca
DB Commodity Short Exchange Traded Notes due April 1, 2038	NYSE Arca
DB Commodity Double Long Exchange Traded Notes due April 1, 2038	NYSE Arca

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DB Crude Oil Short Exchange Traded Notes due June 1, 2038	NYSE Arca
DB Crude Oil Long Exchange Traded Notes due June 1, 2038	NYSE Arca
DB Crude Oil Double Short Exchange Traded Notes due June 1, 2038	NYSE Arca
DB Gold Double Long Exchange Traded Notes due February 15, 2038	NYSE Arca
DB Gold Double Short Exchange Traded Notes due February 15, 2038	NYSE Arca
DB Gold Short Exchange Traded Notes due February 15, 2038	NYSE Arca
ELEMENTS “Dogs of the Dow” Linked to the Dow Jones High Yield Select 10 Total Return Index due November 14, 2022	NYSE Arca
ELEMENTS Linked to the Morningstar® Wide Moat Focus(SM) Total Return Index due October 24, 2022	NYSE Arca
FI Enhanced Global High Yield Exchange Traded Notes Linked to the MSCI World High Dividend Yield USD Gross Total Return Index due October 12, 2023	NYSE Arca

*For listing purpose only, not for trading

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Deutsche Bank Aktiengesellschaft, which we also call Deutsche Bank AG, is a stock corporation organized under the laws of the Federal Republic of Germany. Unless otherwise specified or required by the context, in this document, references to “we”, “us”, “our”, “the Group”, “Deutsche Bank” and “Deutsche Bank Group” are to Deutsche Bank Aktiengesellschaft and its consolidated subsidiaries.

Due to rounding, numbers presented throughout this document may not add up precisely to the totals we provide and percentages may not precisely reflect the absolute figures.

Our registered address is Taunusanlage 12, 60325 Frankfurt am Main, Germany, and our telephone number is +49-69-910-00.

Inclusion of Our Annual Report

We have included as an integral part of this Annual Report on Form 20-F our Annual Report 2018, to which we refer for the responses to certain items hereof. Certain portions of the Annual Report 2018 have been omitted, as indicated therein. The included Annual Report 2018 contains our consolidated financial statements, which we also incorporate by reference into this report, in response to Items 8.A and 18. Such consolidated financial statements differ from those contained in the Annual Report 2018 used for other purposes in that, for Notes 44 and 45 thereto, notes addressing non-U.S. requirements have been replaced with notes addressing U.S. requirements, and Note 46 thereto has been omitted. Such consolidated financial statements have been audited by KPMG AG Wirtschaftsprüfungsgesellschaft, as described in their “Report of Independent Registered Public Accounting Firm” included in the Annual Report 2018, which report is included only in the version of the Annual Report 2018 included in this Annual Report on Form 20-F.

Cautionary Statement Regarding Forward-Looking Statements

We make certain forward-looking statements in this document with respect to our financial condition and results of operations. In this document, forward-looking statements include, among others, statements relating to:

- the potential development and impact on us of economic and business conditions and the legal and regulatory environment to which we are subject;
- the implementation of our strategic initiatives and other responses thereto;
- the development of aspects of our results of operations;
- our expectations of the impact of risks that affect our business, including the risks of losses on our trading processes and credit exposures; and
- other statements relating to our future business development and economic performance.

In addition, we may from time to time make forward-looking statements in our periodic reports to the United States Securities and Exchange Commission on Form 6-K, annual and interim reports, invitations to Annual General Meetings and other information sent to shareholders, offering circulars and prospectuses, press releases and other written materials. Our Management Board, Supervisory Board, officers and employees may also make oral forward-looking statements to third parties, including financial analysts.

Forward-looking statements are statements that are not historical facts, including statements about our beliefs and expectations. We use words such as “believe”, “anticipate”, “expect”, “intend”, “seek”, “estimate”, “project”, “should”, “potentially”, “reasonably possible”, “plan”, “aim” and similar expressions to identify forward-looking statements.

By their very nature, forward-looking statements involve risks and uncertainties, both general and specific. We base these statements on our current plans, estimates, projections and expectations. You should therefore not place too much reliance on them. Our forward-looking statements speak only as of the date we make them, and we undertake no obligation to update any of them in light of new information or future events.

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We caution you that a number of important factors could cause our actual results to differ materially from those we describe in any forward-looking statement. These factors include, among others, the following:

- the potential development and impact on us of economic and business conditions;
- other changes in general economic and business conditions;

- changes and volatility in currency exchange rates, interest rates and asset prices;
- changes in governmental policy and regulation, including measures taken in response to economic, business, political and social conditions;
- the potential development and impact on us of legal and regulatory proceedings to which we are or may become subject;
- changes in our competitive environment;
- the success of our acquisitions, divestitures, mergers and strategic alliances;
- our success in implementing our strategic initiatives and other responses to economic and business conditions and the legal and regulatory environment and realizing the benefits anticipated therefrom; and
- other factors, including those we refer to in “Item 3: Key Information – Risk Factors” and elsewhere in this document and others to which we do not refer.

Use of Non-GAAP Financial Measures

This document and other documents we have published or may publish contain non-GAAP financial measures. Non-GAAP financial measures are measures of our historical or future performance, financial position or cash flows that contain adjustments that exclude or include amounts that are included or excluded, as the case may be, from the most directly comparable measure calculated and presented in accordance with IFRS in our financial statements. Examples of our non-GAAP financial measures, and the most directly comparable IFRS financial measures, are as follows:

Non-GAAP Financial Measure	Most Directly Comparable IFRS Financial Measure
Net income attributable to Deutsche Bank shareholders	Net income
Adjusted costs	Noninterest expenses
Tangible shareholders’ equity, Average tangible shareholders’ equity, Tangible book value, Average tangible book value	Total shareholders’ equity (book value)
Post-tax return on average shareholders’ equity (based on Net income attributable to Deutsche bank shareholders)	Post-tax return on average shareholders’ equity
Post-tax return on average tangible shareholders’ equity	Post-tax return on average shareholders’ equity
Tangible book value per basic share outstanding, Book value per basic share outstanding	Book value per share outstanding

For descriptions of these non-GAAP financial measures and the adjustments made to the most directly comparable financial measures under IFRS, please refer to “Supplementary Information: Non-GAAP Financial Measures”, which is incorporated by reference herein.

When used with respect to future periods, our non-GAAP financial measures are also forward-looking statements. We cannot predict or quantify the levels of the most directly comparable financial measures under IFRS that would correspond to these measures for future periods. This is because neither the magnitude of such IFRS financial measures, nor the magnitude of the adjustments to be used to calculate the related non-GAAP financial measures from such IFRS financial measures, can be predicted. Such adjustments, if any, will relate to specific, currently unknown, events and in most cases can be positive or negative, so that it is not possible to predict whether, for a future period, the non-GAAP financial measure will be greater than or less than the related IFRS financial measure.

CRR/CRD 4 Solvency Measures

Our regulatory assets, exposures, risk-weighted assets, capital and ratios thereof are calculated for regulatory purposes as of December 31, 2018, December 31, 2017 and December 31, 2016 and set forth throughout this document under the regulation on prudential requirements for credit institutions and investment firms (“CRR”) and the Capital Requirements Directive 4 (“CRD 4”) implementing Basel 3, which were published on June 27, 2013 and which apply on and after January 1, 2014. CRR/CRD 4 provides for “transitional” (or “phase-in”) rules, under which capital instruments that are no longer eligible under the new rules are permitted to be phased out as the new rules on regulatory adjustments are phased in, as well as regarding the risk weighting of certain categories of assets. In some cases, CRR/CRD 4 maintains transitional rules that had been adopted in earlier capital adequacy frameworks through Basel 2 or Basel 2.5. The transitional rules relate, e.g., to the risk weighting of certain categories of assets. Unless otherwise noted, our CRR/CRD 4 solvency measures as of December 31, 2018, December 31, 2017 and December 31, 2016 set forth in this document reflect these transitional rules.

We also set forth in this document such CRR/CRD 4 measures on a “fully loaded” basis, reflecting full application of the final CRR/CRD 4 framework without consideration of the transitional provisions under CRR/CRD 4, except as described below. Measures calculated pursuant to our fully loaded methodology are non-GAAP financial measures.

With effect from January 1, 2018, the CRR/CRD 4 transitional rules under which Common Equity Tier 1 (CET 1) regulatory adjustments were phased in have reached a rate of 100 %, together with the 100 % phase-out rate of minority interest only recognizable under the transitional rules. For risk-weighted assets (RWA) the grandfathering of equity investments at a risk weight of 100 % expired by the end of 2017. Instead a risk weight between 190 % and 370 % determined based on Article 155 CRR under the CRR/CRD 4 is applied. Hence, starting 2018 onwards, the CET 1 capital and RWA figures show no difference between CRR/CRD 4 and fully loaded CRR/CRD 4.

The transitional rules included rules permitting the grandfathering of equity investments at a risk-weight of 100 % instead of a risk weight between 190 % and 370 % determined based on Article 155 CRR that would apply under the CRR/CRD 4 fully loaded rules. Despite the grandfathering rule for equity investments not applying under the full application of the final CRR/CRD 4 framework, we continued to apply it in our CRR/CRD 4 fully loaded methodology for a limited subset of equity positions for periods ended December 31, 2016 and before, based on our intention to mitigate the impact of the expiration of the grandfathering rule through sales of the underlying assets or other measures prior to its expiration at end of 2017. We did not apply the grandfathering rule in our CRR/CRD 4 fully loaded methodology for periods ended on or after December 31, 2017.

As the final implementation of CRR/CRD 4 is subject to regulatory interpretation and decision making and may differ from our expectations, and our competitors’ assumptions and estimates regarding such implementation may vary, our fully loaded CRR/CRD 4 measures may not be comparable with similarly labeled measures used by our competitors.

We believe that these fully loaded CRR/CRD 4 calculations provide useful information to investors as they reflect our progress against the new regulatory capital standards and as many of our competitors have been describing CRR/CRD 4 calculations on a “fully loaded” basis.

For descriptions of these fully loaded CRR/CRD 4 measures and the differences from the most directly comparable measures under the CRR/CRD 4 transitional rules, please refer to “Management Report: Risk Report: Risk and Capital Performance: Capital, Leverage Ratio and MREL” in the Annual Report 2018, in particular the subsections thereof entitled “Development of Regulatory Capital”, “Development of Risk-Weighted Assets” and “Leverage Ratio”, and, with respect to the effect of the grandfathering rule on our fully loaded CRR/CRD 4 measures, to “Supplementary Information: Non-GAAP Financial Measures: Fully loaded CRR/CRD 4 Measures” in the Annual Report 2018, each of which are incorporated by reference herein.

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Net interest income	13,192	12,378	14,707	15,881	14,272
Provision for credit losses	525	525	1,383	956	1,134
Net interest income after provision for credit losses	12,667	11,853	13,324	14,925	13,138
Commissions and fee income	10,039	11,002	11,744	12,765	12,409
Net gains (losses) on financial assets/liabilities at fair value through profit or loss	1,332	2,926	1,401	3,842	4,299
Other noninterest income (loss)	753	141	2,161	1,037	969
Total net revenues	25,316	26,447	30,014	33,525	31,949
Compensation and benefits	11,814	12,253	11,874	13,293	12,512
General and administrative expenses	11,286	11,973	15,454	18,632	14,654
Policyholder benefits and claims	0	0	374	256	289
Impairment of goodwill and other intangible assets	0	21	1,256	5,776	111
Restructuring activities	360	447	484	710	133
Total noninterest expenses	23,461	24,695	29,442	38,667	27,699
Income (loss) before income taxes	1,330	1,228	(810)	(6,097)	3,116
Income tax expense	989	1,963	546	675	1,425
Net income (loss)	341	(735)	(1,356)	(6,772)	1,691
Net income attributable to noncontrolling interests	75	15	45	21	28
Net income (loss) attributable to Deutsche Bank shareholders and additional equity components	267	(751)	(1,402)	(6,794)	1,663
in € (unless stated otherwise)					
Basic earnings per share ^{1,2}	(0.01)	(0.53)	(1.08)	(4.52)	1.20
Diluted earnings per share ^{1,3}	(0.01)	(0.53)	(1.08)	(4.52)	1.17
Dividends paid per share ⁴	0.11	0.196	0.00	0.75	0.75
Dividends paid per share in US \$5	0.13	0.21	0.00	0.84	1.02

¹ The number of average basic shares outstanding has been adjusted for all periods before April 2017 in order to reflect the effect of the bonus element of the subscription rights issue in connection with the capital increase in April 2017. The number of average basic shares outstanding has been adjusted for 2014 in order to reflect the effect of the bonus component of subscription rights issued in connection with the capital increase completed in June 2014.

²We calculate basic earnings per share for each period by dividing our net income attributable to Deutsche Bank shareholders by the average number of common shares outstanding. Earnings were adjusted by € 292 million, € 298 million, € 276 million and € 228 million net of tax for the coupons paid on Additional Tier 1 Notes in April 2018, April 2017, April 2016 and April 2015, respectively.

³We calculate diluted earnings per share for each period by dividing our net income attributable to Deutsche Bank shareholders by the average number of common shares outstanding, both after assumed conversions. Earnings were adjusted by € 292 million, € 298 million, € 276 million and € 228 million net of tax for the coupons paid on Additional Tier 1 Notes in April 2018, April 2017, April 2016 and April 2015, respectively. No dilutive effect for 2018 as the net income was offset by coupons paid on Additional Tier 1 Notes. For 2017, 2016 and 2015, there is no dilutive effect as the Group reported a net loss.

⁴Dividends declared and paid in the year.

⁵Dividends declared and paid in US \$ were translated from euro into US \$ based on the exchange rates as of the respective payment days.

⁶ The dividend paid in 2017 consisted of € 0.11 for 2016 and of € 0.08 for 2015 that were paid simultaneously in 2017 after the agreement by the annual general meeting in 2017.

Balance Sheet Data

	2018	2017	2016	2015	2014
	in € m.	in € m.	in € m.	in € m.	in € m.
Total assets	1,348,137	1,474,732	1,590,546	1,629,130	1,708,703
Loans at amortized cost	400,297	401,699	408,909	427,749	405,612
Deposits	564,405	581,873	550,204	566,974	532,931
Long-term debt	152,083	159,715	172,316	160,016	144,837
Common shares ¹	5,291	5,291	3,531	3,531	3,531
Total shareholders' equity	62,495	63,174	59,833	62,678	68,351
Common Equity Tier 1 capital (CRR/CRD 4) ²	47,486	50,808	47,782	52,429	60,103
Common Equity Tier 1 capital (CRR/CRD 4 fully loaded) ²	47,486	48,300	42,279	44,101	46,076
Tier 1 capital (CRR/CRD 4) ²	55,091	57,631	55,486	58,222	63,898
Tier 1 capital (CRR/CRD 4 fully loaded) ²	52,082	52,921	46,829	48,651	50,695
Total regulatory capital (CRR/CRD 4) ²	61,292	64,016	62,158	64,522	68,293
Total regulatory capital (CRR/CRD 4 fully loaded) ²	61,292	63,250	59,502	60,976	63,072

¹Capital increased from authorized capital against cash contributions through public offerings with subscription rights in April 2017 and in June 2014.

²Figures presented based on the transitional rules ("CRR/CRD 4") and the full application ("CRR/CRD 4 fully loaded") of the CRR/CRD 4 framework.

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Certain Key Ratios and Figures

	2018	2017	2016	2015	2014
Share price at period-end ¹	€ 6.97	€ 15.88	€ 15.40	€ 20.10	€ 22.30
Share price high ¹	€ 16.46	€ 17.82	€ 19.72	€ 29.83	€ 34.05
Share price low ¹	€ 6.68	€ 13.11	€ 8.83	€ 18.46	€ 20.22
Book value per basic share outstanding ^{2,4}	€ 29.69	€ 30.16	€ 38.14	€ 40.31	€ 44.02
Tangible book value per basic share outstanding ^{3,4}	€ 25.71	€ 25.94	€ 32.42	€ 33.83	€ 34.39
Post-tax return on average shareholders' equity ⁵	0.4%	(1.2)%	(2.3)%	(9.8)%	2.7%
Post-tax return on average tangible shareholders' equity ⁶	0.5%	(1.4)%	(2.7)%	(12.3)%	3.5%
Cost/income ratio ⁷	92.7%	93.4%	98.1%	115.3%	86.7%
Compensation ratio ⁸	46.7%	46.3%	39.6%	39.7%	39.2%
Noncompensation ratio ⁹	46.0%	47.0%	58.5%	75.7%	47.5%

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Common Equity Tier 1 capital ratio (CRR/CRD 4) ¹⁰	13.6%	14.8%	13.4%	13.2%	15.2%
Common Equity Tier 1 capital ratio (CRR/CRD 4 fully loaded) ¹⁰	13.6%	14.0%	11.8%	11.1%	11.7%
Tier 1 capital ratio (CRR/CRD 4) ¹⁰	15.7%	16.8%	15.6%	14.7%	16.1%
Tier 1 capital ratio (CRR/CRD 4 fully loaded) ¹⁰	14.9%	15.4%	13.1%	12.3%	12.9%
Employees at period-end (full-time equivalent):					
In Germany	41,669	42,526	44,600	45,757	45,392
Outside Germany	50,068	55,009	55,144	55,347	52,746
Branches at period-end:					
In Germany	1,409	1,570	1,776	1,827	1,845
Outside Germany	655	855	880	963	969

¹Historical share prices have been adjusted on March 20, 2017 with retroactive effect to reflect the capital increase by multiplying a correcting factor of 0.8925 and on June 5, 2014 with retroactive effect to reflect the capital increase by multiplying a correcting factor of 0.9538.

²Shareholders' equity divided by the number of basic shares outstanding (both at period-end).

³Shareholders' equity less goodwill and other intangible assets, divided by the number of basic shares outstanding (both at period-end).

⁴The number of average basic shares outstanding has been adjusted for all periods before April 2017 in order to reflect the effect of the bonus element of the subscription rights issue in connection with the capital increase in April 2017 and 2014 has been adjusted in order to reflect the effect of the bonus component of subscription rights issued in connection with the capital increase completed in June 2014.

⁵Net income attributable to our shareholders as a percentage of average shareholders' equity.

⁶Net income attributable to our shareholders as a percentage of average tangible shareholders' equity.

⁷Total noninterest expenses as a percentage of net interest income before provision for credit losses, plus noninterest income.

⁸Compensation and benefits as a percentage of total net interest income before provision for credit losses, plus noninterest income.

⁹Noncompensation noninterest expenses, which is defined as total noninterest expenses less compensation and benefits, as a percentage of total net interest income before provision for credit losses, plus noninterest income.

¹⁰Figures are based on the transitional rules ("CRR/CRD 4") and the full application ("CRR/CRD 4 fully loaded") of the CRR/CRD 4 framework.

Dividends

The following table shows the dividend per share in euro and in US dollars for the years ended December 31, 2018, 2017, 2016, 2015 and 2014. We declare our dividends at our Annual General Meeting following each year. For 2018, the Management Board will propose to the Annual General Meeting to pay a dividend of € 0.11 per share. Our dividends are based on the non-consolidated results of Deutsche Bank AG as prepared in accordance with German accounting principles. Because we declare our dividends in euro, the amount an investor actually receives in any other currency depends on the exchange rate between euro and that currency at the time the euros are converted into that

currency.

In general, the German withholding tax applicable to dividends is 26.375 % (consisting of a 25 % withholding tax and an effective 1.375 % surcharge). According to an amendment of the German Investment Tax Act dividends received by a fund within the meaning of the German Investment Tax Act are subject to 15 % German withholding tax equal to the Treaty tax rate. For individual German tax residents the withholding tax paid represents for private dividends, generally, the full and final income tax applicable to the dividends. Dividend recipients who are tax residents of countries that have entered into a convention for avoiding double taxation may be eligible to receive a refund from the German tax authorities for a portion of the amount withheld and in addition may be entitled to receive a tax credit for the German withholding tax not refunded in accordance with their local tax law.

US residents will be entitled to receive a refund equal to 11.375 % of the dividends received. For US federal income tax purposes, the dividends we pay are not eligible for the dividends received deduction generally allowed for dividends received by US corporations from other US corporations.

Dividends in the table below are presented before German withholding tax.

See “Item 10: Additional Information – Taxation” for more information on the tax treatment of our dividends.

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	Dividends per share ^{1,4}	Dividends per share ⁴	Payout ratio ^{2,3} Basic earnings per share	Diluted earnings per share
2018 (proposed)	\$ 0.13	€ 0.11	N/M	N/M
2017	\$ 0.13	€ 0.11	N/M	N/M
2016	\$ 0.12	€ 0.11	N/M	N/M
2015	\$ 0.09	€ 0.08	N/M	N/M
2014	\$ 0.91	€ 0.75	63 %	64 %

N/M – Not meaningful

¹For your convenience, we present dividends in US dollars for each year by translating the euro amounts at the period end rate for the last business day of each year.

²We define our payout ratio as the dividends we paid per share in respect of each year as a percentage of our basic and diluted earnings per share for that year.

³ The number of average basic and diluted shares outstanding has been adjusted in order to reflect the effect of the bonus element of the subscription rights issue in connection with the capital increase in April 2017 and in June 2014. No dilutive effect for 2018 as net income was offset by AT1 coupons paid. For 2017, 2016 and 2015, there is no dilutive effect as the Group reported a net loss attributable to shareholders.

⁴Dividends for 2016 and 2015 were approved by the annual general meeting in 2017 and were paid simultaneously in 2017.

Capitalization and Indebtedness

Consolidated capitalization in accordance with IFRS as of December 31, 2018

	in € m.
Debt: ^{1,2}	
Long-term debt	152,083
Trust preferred securities	3,168
Long-term debt at fair value through profit or loss	5,607
Total debt	160,859
Shareholders' equity:	
Common shares (no par value)	5,291
Additional paid-in capital	40,252
Retained earnings	16,714
Common shares in treasury, at cost	(15)
Accumulated other comprehensive income, net of tax	
Unrealized net gains (losses) on financial assets at fair value through other comprehensive income, net of tax and other	(34)
Unrealized net gains (losses) on derivatives hedging variability of cash flows, net of tax	17
Unrealized net gains (losses) on assets classified as held for sale, net of tax	0
Unrealized net gains (losses) attributable to change in own credit risk of financial liabilities designated at fair value through profit and loss, net of tax	28
Foreign currency translation, net of tax	228
Unrealized net gains (losses) from equity method investments	15
Total shareholders' equity	62,495
Equity component of financial instruments	4,675
Noncontrolling interests	1,568
Total equity	68,737
Total capitalization	229,596

¹ € 785 million (0.5 %) of our debt was guaranteed as of December 31, 2018. This consists of debt of a subsidiary which is guaranteed by the German government.

2€ 62,038 million (39 %) of our debt was secured as of December 31, 2018.

Reasons for the Offer and Use of Proceeds

Not required because this document is filed as an annual report.

Risk Factors

An investment in our securities involves a number of risks. You should carefully consider the following information about the risks we face, together with other information in this document, when you make investment decisions involving our securities. If one or more of these risks were to materialize, it could have a material adverse effect on our financial condition, results of operations, cash flows or prices of our securities.

Risks Relating to the Macroeconomic, Geopolitical and Market Environment

While the global economy showed robust growth in 2018, significant macroeconomic risks remain that could negatively affect the results of operations and financial condition in some of our businesses as well as our strategic plans, including deterioration of the economic outlook for the euro area and slowing in emerging markets, trade tensions between the United States and China as well between the United States and Europe, inflation risks, Brexit, European elections and geopolitical risks.

The global economy showed robust growth, while emerging markets slowed somewhat towards the end of the year 2018. Trade tensions between the United States and China as well between the United States and Europe reached a level that weighed on global trade. Meanwhile, the strong US economy provided positive impetus for global growth. Against this backdrop, global economic growth remained flat at 3.8 % in 2018, following 3.8 % in 2017. The global inflation rate increased to 3.3 % in 2018.

Over the course of 2018, the economic outlook for the euro area slowly deteriorated with Italy and Germany in or close to a technical recession in the second half of the year. The European economy expanded by 1.8 %, roughly 0.5 percentage points below the expectations at the start of the year, due to temporary effects in some member states as well as the worsened external economic environment. Growth was supported by domestic demand underpinned by solid income growth and accommodative financial conditions. While monetary policy remained accommodative, the European Central Bank (“ECB”) phased out its net asset purchases. Consumer prices in the euro area rose by 1.7 % in 2018. German GDP growth of 1.4 % in 2018 surprised to the downside.

The US economy showed a strong performance. Supported by tax cuts, fiscal spending as well as supportive financial conditions and consumer spending backed by wage growth and a tight labor market, US GDP grew by 2.9 % in 2018. The inflation rate reached 2.4 % and thus stood above the Federal Reserve's target of 2 %. The US central bank's monetary policy responded with four interest rate increases in 2018.

Japan's GDP growth slowed considerably to 0.7 % in 2018. In 2018, GDP in the emerging markets increased by 4.9 %. At 6.6 %, the Chinese economy grew somewhat more strongly than expected at the beginning of 2018. Chinese exports were resilient despite growing trade tensions throughout 2018.

Our heat-map of global risks has modestly changed in 2019 compared to 2018. Macroeconomic risks are now more pronounced to the downside, especially in Asia and Europe. China's GDP growth is slowing as policymakers focus on deleveraging and tightening fiscal policy, but officials still have available tools to respond to a downturn and we expect further easing of Chinese monetary policy this year. In Europe, growth is stagnating and the debt burden in some countries, especially Italy, is a concern. Political risks also remain elevated, which may weigh on business investment and economic activity, as Brexit negotiations continue and elections for the European Parliament are due in May 2019. Other elections are possible across the major European countries. In the United States, we remain attuned to the risk of higher inflation, given the extremely tight levels of labor market supply, as well as any signs of a more substantive slowdown. We anticipate a slower pace of growth in 2019 versus 2018, but do not view a US recession as likely. A failure to secure a trade deal between the United States and China, the imposition of additional tariffs in the automobile sector as well as on remaining China imports, or an escalation of conflicts beyond trade, could further reduce growth.

If these risks materialize, or current negative conditions persist or worsen, our business, results of operations or strategic plans could be adversely affected.

In the European Union, continued elevated levels of political uncertainty could have unpredictable consequences for the financial system and the greater economy, and could contribute to European de-integration in certain areas,

potentially leading to declines in business levels, write-downs of assets and losses across our businesses. Our ability to protect ourselves against these risks is limited.

The last several years have been characterized by increased political uncertainty as Europe in particular has been impacted by the European sovereign debt crisis, the potential withdrawal of the United Kingdom from the European Union (“Brexit”), Italian political and economic developments, protests in France, the refugee crisis and the increasing attractiveness to voters of populist and anti-austerity movements. A disorderly Brexit could aggravate the already uncertain economic outlook in the UK and Europe and hamper growth. In Continental Europe, the confrontation between Italy and the European Commission, an escalation of the “Yellow Vest” movement in France, or uncertainties around upcoming European Parliamentary elections could heighten volatility and harm eurozone growth. Although the severity of the European debt crisis appeared to have abated somewhat over recent years as the actions by the ECB, the rescue packages and the economic recovery appeared to have stabilized the situation in Europe, political uncertainty has nevertheless continued to be at an elevated level in recent periods and could trigger unwinding of aspects of European integration that have benefitted our businesses. Against this backdrop, the prospects for national structural reform and further integration among EU member states, both viewed as important tools to reduce the eurozone’s vulnerabilities to future crises, appear to have worsened. These trends may ultimately result in material reductions in our business levels as our customers rein in activity levels in light of decreased economic output and increased uncertainty, which would materially adversely affect our operating results and financial condition.

An escalation of political risks could have consequences both for the financial system and the greater economy as a whole, potentially leading to declines in business levels, write-downs of assets and losses across our businesses.

In addition, in a number of EU member states which had national elections since 2017, including France, Germany and the Netherlands, political parties disfavoring current levels of European integration, or espousing the unwinding of European integration to varying extents, have attracted support. The Brexit vote has also given a voice to some of these political parties to challenge European integration. The resulting uncertainty could have significant effects on the value of the euro and on prospects for member states’ financial stability, which in turn could potentially lead to a significant deterioration of the sovereign debt market, especially if Brexit or any other member country’s exit did not result in the strongly adverse effects on the exiting country that many have predicted. If one or more members of the eurozone defaults on their debt obligations or decides to leave the common currency, this would result in the reintroduction of one or more national currencies. Should a eurozone country conclude it must exit the common currency, the resulting need to reintroduce a national currency and restate existing contractual obligations could have unpredictable financial, legal, political and social consequences, leading not only to significant losses on sovereign debt but also on private debt in that country. Given the highly interconnected nature of the financial system within the eurozone, and the high levels of exposure we have to public and private counterparties around Europe, our ability to plan for such a contingency in a manner that would reduce our exposure to non-material levels is likely to be limited. If the overall economic climate deteriorates as a result of one or more departures from the eurozone, our businesses could be adversely affected, and, if overall business levels decline or we are forced to write down significant exposures among our various businesses, we could incur substantial losses.

The potential withdrawal of the United Kingdom from the European Union – Brexit – may have adverse effects on our business, results of operations or strategic plans.

The UK voted on June 23, 2016 in a non-binding national referendum to withdraw from the European Union. Following an act of Parliament adopted in early 2017, on March 29, 2017, the UK formally gave notice of its withdrawal from the European Union to the European Council. Pursuant to the Treaty of the European Union, withdrawal would be effective on the date of entry into force of a withdrawal agreement or, failing that, two years after the withdrawal notification – that is, March 29, 2019 – unless the European Council and UK agree to extend the two-year period. In January 2019, the UK Parliament rejected a proposed withdrawal agreement, leaving open the possibility that withdrawal without an agreement – a so-called “no deal” or “hard” Brexit – would take place on March 29, 2019.

Given this and other uncertainties in connection with the UK's withdrawal from the European Union, it is difficult to determine the exact impact on us over the long term. However, the UK's economy and those of the eurozone countries are very tightly linked as a result of EU integration projects other than the euro, and the scale of our businesses in the UK – especially those dependent on activity levels in the City of London, to which we are heavily exposed and which may deteriorate as a result of Brexit – means that even modest effects in percentage terms can have a very substantial adverse effect on our businesses. Brexit could, in particular, lead to a disruption of the provision of cross-border financial services. A withdrawal of the UK from the EU without a withdrawal agreement may lead to greater costs to reorganize part of our business than would have been the case with an agreed phase-in solution and may restrict our ability to provide financial services to and from the UK. The currently unsettled future relationship between the EU and the UK is also likely to lead to further uncertainty in relation to the regulation of cross-border business activities.

Brexit is virtually certain to impact the structure and business model of our UK operations, though we are unable to determine this impact with any precision, as there remains a lack of clarity as to the details and timing of the changes. To prepare for the departure of the UK from the European Union, we are in the process of applying for UK authorization to continue to undertake regulated activity in the UK (previously undertaken pursuant to the European Passport provisions). The UK Prudential Regulatory Authority (“PRA”) and the UK Financial Conduct Authority (“FCA”) are in the process of settling new rulebooks in anticipation of UK law and regulatory regime changing as the UK withdraws from the European Union. We expect that we will be subject to additional and new UK regulation (prudential and conduct requirements), that our activities in the UK will be subject to increased supervision and monitoring by both the PRA and the FCA and that we may have to undertake operational change to comply with the new regulatory landscape in the UK.

Despite our preparations, as a result of Brexit, our business, results of operations or strategic plans could be adversely affected.

We may be required to take impairments on our exposures to the sovereign debt of European or other countries if the European sovereign debt crisis reignites. The credit default swaps into which we have entered to manage sovereign credit risk may not be available to offset these losses.

The effects of the sovereign debt crisis have been especially evident in the financial sector, as a large portion of the sovereign debt of eurozone countries is held by European financial institutions, including Deutsche Bank. As of December 31, 2018, we had a direct sovereign credit risk exposure of € 3.6 billion to Italy, € 1.8 billion to Spain, € 334 million to Ireland and € 53 million to Greece. Despite the apparent abatement of the crisis in recent years, it remains uncertain whether, in light of the current political environment, Greece or other eurozone sovereigns, such as Spain, Italy, Portugal and Cyprus, will be able to manage their debt levels in the future and whether Greece will attempt to renegotiate its past international debt restructuring. The rise of anti-austerity parties and populist sentiment in many of these countries poses a threat to the medium- to long-term measures recommended for these countries to alleviate the tensions in the eurozone caused by drastically differing economic situations among the eurozone states. In the future, negotiations or exchanges similar to the Greek debt restructuring in 2012 could take place with respect to the sovereign debt of these or other affected countries. The outcome of any negotiations regarding changed terms (including reduced principal amounts or extended maturities) of sovereign debt may result in additional impairments of assets on our balance sheet. Any negotiations are highly likely to be subject to political and economic pressures that we cannot control, and we are unable to predict their effects on the financial markets, on the greater economy or on ourselves.

In addition, any restructuring of outstanding sovereign debt may result in potential losses for us and other market participants that are not covered by payouts on hedging instruments that we have entered into to protect against the

risk of default. These instruments largely consist of credit default swaps, generally referred to as CDSs, pursuant to which one party agrees to make a payment to another party if a credit event (such as a default) occurs on the identified underlying debt obligation. A sovereign restructuring that avoids a credit event through voluntary write-downs of value may not trigger the provisions in CDSs we have entered into, meaning that our exposures in the event of a write-down could exceed the exposures we previously viewed as our net exposure after hedging. Additionally, even if the CDS provisions are triggered, the amounts ultimately paid under the CDSs may not correspond to the full amount of any loss we incur. We also face the risk that our hedging counterparties have not effectively hedged their own exposures and may be unable to provide the necessary liquidity if payments under the instruments they have written are triggered. This may result in systemic risk for the European banking sector as a whole and may negatively affect our business and financial position.

Risks Relating to Our Business and Strategy

Our results of operation and financial condition, in particular those of our Corporate & Investment Bank, continue to be negatively impacted by the challenging market environment, uncertain macroeconomic and geopolitical conditions, lower levels of client activity, increased competition and regulation, and the immediate impact of our strategic decisions. If we are unable to improve our profitability as we continue to face these headwinds, we may be unable to meet many of our strategic aspirations, and may have difficulty maintaining capital, liquidity and leverage at levels expected by market participants and our regulators.

In 2018, revenues declined in each of our corporate divisions, reflecting the negative impact of a challenging market environment characterized by low interest rates and low volatility, uncertain macroeconomic and geopolitical conditions, lower levels of client activity and increased competition and regulation. The ultra-low interest rate environment, especially in the eurozone, has put pressure on our margins in our traditional banking business and our trading and markets businesses. Additionally, the low volatility in the market has had a negative impact on our trading and client-driven businesses that may perform well in more volatile environments.

Changes in our business mix towards lower-margin, lower-risk products can limit our opportunities to profit from volatility. Regulators have generally encouraged the banking sector to focus more on the facilitation of client flow and less on risk taking. This has been effected in part by increasing capital requirements for higher-risk activities. In addition, some of our regulators have encouraged or welcomed changes to our business perimeter, consistent with their emphasis on lower-risk activities for banks. In recent years, we have reduced our exposure to a number of businesses that focused on riskier but more capital-intensive products (but that in earlier periods also had the potential to be more highly profitable). Further pressure on our revenues and profitability has resulted from long-term structural trends driven by regulation (especially increased regulatory capital, leverage and liquidity requirements and increased compliance costs) and competition that have further compressed our margins in many of our businesses. Should a combination of these factors continue to lead to reduced margins and subdued activity levels in our trading and markets business over the longer term, this could reflect structural challenges that may lead us to consider even further-reaching changes to aspects of our business mix than those embedded in our business planning and that support our financial targets.

Although we have in recent years made considerable progress resolving litigation, enforcement and similar matters broadly within our established reserves, this pattern may not continue. We currently expect these costs to be higher than in the most recent years, potentially significantly higher than the relatively low level seen in 2018. In particular, these costs could substantially exceed the level of provisions that we established for our litigation, enforcement and similar matters, which can contribute to negative market perceptions about our financial health, costing us business. This, combined with the actual costs of litigation, enforcement and other matters, could in turn adversely affect our

ability to maintain capital, liquidity and leverage at levels expected by market participants and our regulators.

Market speculation about potential legal, regulatory and enforcement matters, or about other matters, could have persistent adverse effects on our business or revenue levels. In particular, in late 2018 we suffered some reductions in business volumes and client balances, particularly in some parts of our Corporate & Investment Bank, as a result of speculation relating to our correspondent banking relationship with Danske Bank's Estonia branch and a raid by German law enforcement authorities on our offices in November 2018 relating to alleged failure to report suspicious activities potentially related to money laundering. Adverse developments, including our reporting of lower revenues, can also harm perceptions of us in the market and lead to further pressure on employee engagement, client relationships and revenues. These factors have placed pressure on the markets for our securities, along with concerns regarding our ability to overcome the numerous headwinds facing us.

As a result of this as well as the broader prospects for our business, we may find it necessary or desirable to raise additional capital in the future to maintain our capital, liquidity and leverage at levels required by our regulators or viewed by market participants as necessary for our businesses in comparison with our international peers, which would result in dilution to our current shareholders.

Market speculation about potential consolidation in the financial sector in Europe and our role in that consolidation could also have adverse effects on our business and revenue levels. Speculation has intensified in recent months concerning our participation in industry consolidation. Given the overall trend in the industry, we consider business combinations from time to time. Although speculation concerning consolidation is frequent, there are numerous impediments to completing transactions in our sector, including those posed by the regulatory environment, differing business models, valuation issues and the protracted headwinds facing the industry, including the low interest rate environment, market pressures and the high costs associated with rationalizing and simplifying institutions' businesses. Accordingly, we may determine to cease consideration of business combinations, or may determine not to pursue available opportunities. The markets may perceive us negatively if we fail to participate in industry consolidation or if we do not complete transactions that market participants expect. This could have material adverse effects on our business, and accordingly on our financial condition, results of operations and liquidity, as well as on our share price.

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We may have difficulty in identifying and executing business combinations, and both engaging in combinations and avoiding them could materially harm our results of operations and our share price.

We consider business combinations from time to time. Were we to announce or complete a significant business combination transaction, our share price or the share price of the combined entity could decline significantly if investors viewed the transaction as too costly, dilutive to existing shareholders or unlikely to improve our competitive position. It is generally not feasible for our reviews of any business with which we might engage in a combination to be complete in all respects. As a result, a combination may not perform as well as expected. In addition, we may fail to integrate our operations successfully with any entity with which we participate in a business combination. Failure to complete announced business combinations or failure to achieve the expected benefits of any such combination could materially and adversely affect our profitability. Such failures could also affect investors' perception of our business prospects and management, and thus cause our share price to fall. They could also lead to departures of key employees, or lead to increased costs and reduced profitability if we felt compelled to offer them financial incentives to remain.

If we avoid entering into business combination transactions or if announced or expected transactions fail to materialize, market participants may perceive us negatively. We may also be unable to expand our businesses, especially into new business areas, as quickly or successfully as our competitors if we do so through organic growth alone. These perceptions and limitations could cost us business and harm our reputation, which could have material adverse effects on our financial condition, results of operations and liquidity.

Adverse market conditions, asset price deteriorations, volatility and cautious investor sentiment have affected and may in the future materially and adversely affect our revenues and profits, particularly in our investment banking, brokerage and other commission- and fee-based businesses. As a result, we have in the past incurred and may in the future incur significant losses from our trading and investment activities.

As a global investment bank, we have significant exposure to the financial markets and are more at risk from adverse developments in the financial markets than are institutions engaged predominantly in traditional banking activities. Sustained market declines have in the past caused and can in the future cause our revenues to decline, and, if we are unable to reduce our expenses at the same pace, can cause our profitability to erode or cause us to show material losses. Volatility can also adversely affect us, by causing the value of financial assets we hold to decline or the expense of hedging our risks to rise. Reduced customer activity can also lead to lower revenues in our “flow” business.

Specifically, our investment banking revenues, in the form of financial advisory and underwriting fees, directly relate to the number and size of the transactions in which we participate and are susceptible to adverse effects from sustained market downturns. These fees and other income are generally linked to the value of the underlying transactions and therefore can decline with asset values. In addition, periods of market decline and uncertainty tend to dampen client appetite for market and credit risk, a critical driver of transaction volumes and investment banking revenues, especially transactions with higher margins. In recent and other times in the past, decreased client appetite for risk has led to lower levels of activity and lower levels of profitability in our Corporate & Investment Bank corporate division. Our revenues and profitability could sustain material adverse effects from a significant reduction in the number or size of debt and equity offerings and merger and acquisition transactions.

Market downturns also have led and may in the future lead to declines in the volume of transactions that we execute for our clients and, therefore, to declines in our noninterest income. In addition, because the fees that we charge for managing our clients’ portfolios are in many cases based on the value or performance of those portfolios, a market downturn that reduces the value of our clients’ portfolios or increases the amount of withdrawals reduces the revenues we receive from our asset management and private banking businesses. Even in the absence of a market downturn, below-market or negative performance by our investment funds may result in increased withdrawals and reduced inflows, which would reduce the revenue we receive. While our clients would be responsible for losses we incur in taking positions for their accounts, we may be exposed to additional credit risk as a result of their need to cover the losses where we do not hold adequate collateral or cannot realize it. Our business may also suffer if our clients lose money and we lose the confidence of clients in our products and services.

In addition, the revenues and profits we derive from many of our trading and investment positions and our transactions in connection with them can be directly and negatively impacted by market prices. In each of the product and business lines in which we enter into these trading and investment positions, part of our business entails making assessments about the financial markets and trends in them. When we own assets, market price declines can expose us to losses. Many of the more sophisticated transactions of our Corporate & Investment Bank corporate division are influenced by price movements and differences among prices. If prices move in a way we have not anticipated, we may experience losses. Also, when markets are volatile, the assessments we have made may prove to lead to lower revenues or profits, or may lead to losses, on the related transactions and positions. In addition, we commit capital and take market risk to facilitate certain capital markets transactions; doing so can result in losses as well as income volatility. Such losses may especially occur on assets we hold for which there are not very liquid markets to begin with. Assets that are not traded on stock exchanges or other public trading markets, such as derivatives contracts between banks, may have values that we calculate using models other than publicly-quoted prices. Monitoring the deterioration of prices of assets like these is difficult and could lead to losses we did not anticipate. We can also be adversely affected if general perceptions of risk cause uncertain investors to remain on the sidelines of the market, curtailing their activity and in

turn reducing the levels of activity in those of our businesses dependent on transaction flow.

Our liquidity, business activities and profitability may be adversely affected by an inability to access the debt capital markets or to sell assets during periods of market-wide or firm-specific liquidity constraints. Credit rating downgrades have contributed to an increase in our funding costs, and any future downgrade could materially adversely affect our funding costs, the willingness of counterparties to continue to do business with us and significant aspects of our business model.

We have a continuous demand for liquidity to fund our business activities. Our liquidity may be impaired by an inability to access secured and/or unsecured debt markets, an inability to access funds from our subsidiaries or otherwise allocate liquidity optimally across our businesses, an inability to sell assets or redeem our investments, or unforeseen outflows of cash or collateral. This situation may arise due to circumstances unrelated to our businesses and outside our control, such as disruptions in the financial markets, or circumstances specific to us, such as reluctance of our counterparties or the market to finance our operations due to perceptions about potential outflows resulting from litigation, regulatory and similar matters, actual or perceived weaknesses in our businesses, our business model or our strategy, as well as in our resilience to counter negative economic and market conditions. For example, we have experienced steep declines in the price of our shares and increases in the spread versus government bonds at which our debt trades in the secondary markets. Reflecting these conditions, our internal estimates of our available liquidity over the duration of a stressed scenario have at times been negatively impacted in recent periods. Such effects were particularly acute in the autumn of 2016 in response to market speculation about the potential magnitude of a settlement of civil claims then being negotiated with the US Department of Justice (“DOJ”) in connection with our issuance and underwriting of residential mortgage-backed securities. In addition, negative developments concerning other financial institutions perceived to be comparable to us and negative views about the financial services industry in general have also affected us in recent years. These perceptions have affected the prices at which we have accessed the capital markets to obtain the necessary funding to support our business activities; should these perceptions exist, continue or worsen, our ability to obtain this financing on acceptable terms may be adversely affected. Among other things, an inability to refinance assets on our balance sheet or maintain appropriate levels of capital to protect against deteriorations in their value could force us to liquidate assets we hold at depressed prices or on unfavorable terms, and could also force us to curtail business, such as the extension of new credit. This could have an adverse effect on our business, financial condition and results of operations.

In addition, we have benefited in recent years from a number of incremental measures by the ECB and other central banks to provide additional liquidity to financial institutions and the financial markets, particularly in the eurozone. To the extent these actions are curtailed or halted, our funding costs could increase, or our funding supply could decrease, which could in turn result in a reduction in our business activities. In particular, any decision by the ECB to discontinue or reduce quantitative easing or further steps by the Federal Reserve to tighten its monetary policy or actions by central banks more generally to tighten their monetary policy will likely cause long-term interest rates to increase and accordingly impact the costs of our funding.

Since the start of the global financial crisis, the major credit rating agencies have lowered our credit ratings or placed them on review or negative watch on multiple occasions. These credit rating downgrades have contributed to an increase in our funding costs. Our elevated spread levels (meaning the difference between the yields on our securities as compared to benchmark government bonds) are sensitive to further adverse developments and any future downgrade could bring our credit rating into the non-investment grade category . This could materially and adversely affect our funding costs and significant aspects of our business model. The effect would depend on a number of factors including whether a downgrade affects financial institutions across the industry or on a regional basis, or is intended to reflect circumstances specific to us, such as our potential settlement of regulatory, litigation and similar

matters; any actions our senior management may take in advance of or in response to the downgrade; the willingness of counterparties to continue to do business with us; any impact of other market events and the state of the macroeconomic environment more generally.

Additionally, under many of the contracts governing derivative instruments to which we are a party, a downgrade could require us to post additional collateral, lead to terminations of contracts with accompanying payment obligations for us or give counterparties additional remedies. We take these effects into account in our liquidity stress testing analysis, as further described in “Management Report: Risk Report: Liquidity Risk: Stress Testing and Scenario Analysis” in the Annual Report 2018.

In the second quarter of 2018, we announced changes to our strategy and updates to our financial targets. If we are unable to implement our strategic plans successfully, we may be unable to achieve our financial objectives, or we may incur losses or low profitability, and our financial condition, results of operations and share price may be materially and adversely affected.

In the second quarter of 2018, we announced changes to our strategy and updates to our financial targets. Management is focused on materially improving returns to shareholders over time and on deploying our balance sheet and other resources to the highest return activities consistent with our client franchise and risk appetite. To achieve these primary objectives we have defined four key strategic imperatives: First, shift the bank to a more stable revenue and earnings profile. Second, execute on clearly defined strategies in our Private & Commercial Bank (PCB) and our Asset Management (AM) businesses. Third, reshape our Corporate & Investment Bank (CIB) towards a model which emphasizes our core strength in transaction banking, capital markets, financing and treasury solutions. And fourth, reduce our costs and commit to an uncompromising cost culture.

Our Private & Commercial Bank comprises the three business units Private and Commercial Business (Germany), Private and Commercial Business (International) and Wealth Management (Global).

Private and Commercial Business (Germany) serves more than 20 million private and commercial clients through two main brands: Deutsche Bank and Postbank. The two brands operate through a single company following the May 2018 merger of Postbank AG and Deutsche Bank Privat- und Geschäftskunden AG to form DB Privat- und Firmenkundenbank AG. We have targeted cost and revenue synergies for this business of € 900 million annually which we aim to fully realize in 2022 and beyond. A new operating model with a joint infrastructure and product platform as well as a joint management is being implemented to support pursuit of these targets. We estimate that the total cost of the planned restructuring measures to integrate Postbank into the Group and other investments will be € 1.9 billion, resulting from restructuring and severance costs as well as IT and other costs. Unforeseen difficulties may emerge in connection with the integration efforts, including potential difficulties due to differing IT systems, difficulties in integrating personnel, commitment of management resources in connection with the integration process and the potential loss of key personnel. The benefits, cost and timeframe of the integration could be adversely affected by any of these factors, as well as a variety of factors beyond our control, such as negative market developments. Should any of these risks materialize, the cost savings and other benefits we expect to realize from the integration may only come at a higher cost than anticipated, or may not be realized within the period we anticipate or to the extent we plan.

In our Private and Commercial Business (International), we continue to sharpen focus and invest into our core markets. While streamlining our geographic footprint with the completed partial exit from Poland and the ongoing disposal of our business in Portugal, we are investing into our Italian, Spanish, Belgian and Indian operations as we view them as attractive and growing markets. In Wealth Management we seek to grow our market share, both in Germany and internationally. In PCB we are also proceeding with our investments in digital solutions for banking and non-banking products through further equity investments into strategic partners and enhancements of our digital platform. We may not be able to achieve the growth we seek by the strategies for these businesses.

For DWS, with the IPO now completed, we focus on growing assets under management, improving efficiency and profitability and driving strong DWS shareholder return, including a robust dividend. The integration of service and infrastructure functions from DB Group into DWS Group seeks to enable us to achieve further operational efficiencies across the platform, including process improvements to reduce costs and enhance client experience. The IPO of DWS may not entirely mitigate the market concerns about Deutsche Bank that impacted our AM business in the past or that may arise from new challenges, and DWS may fail to grow assets under management, become more efficient or profitable or be able to achieve high levels of return for DWS shareholders. As the continued majority owner of DWS, we continue to be adversely affected by any of these factors as well.

We intend for CIB to remain a leading European corporate and investment bank with global reach. As part of the restructuring announced and completed in 2018, CIB will focus on its core product strengths and key markets. Actions from 2018 including reducing our commitment to certain businesses and investing in others. In 2019, CIB is focused on delivering controlled revenue growth from targeted resource deployment and investment. Reducing our commitment on certain businesses might negatively impact our client servicing capacity, therefore impacting our existing revenue streams. In businesses where we are increasing our investment, clients may choose not to expand their business or portfolio with us, thereby negatively influencing our ability to capitalize on these opportunities.

We aim to reduce adjusted costs in 2019 by € 1 billion to € 21.8 billion and to reduce our internal workforce to below 90,000 full-time employees by year-end 2019. We are also working towards a target for Post-tax Return on Average Tangible Equity of greater than 4 % in 2019. Over time, we aspire to achieve a circa 10 % Post-Tax Return on Tangible Equity in a normalized environment and on the basis of the achievement of our cost target.

As we execute on our near- and long-term operating targets, we intend to continue managing our balance sheet conservatively, with capital targets of a CRR/CRD 4 Common Equity Tier 1 capital ratio above 13.0 % and a CRR/CRD 4 Leverage Ratio (phase-in) of 4.5 % over time. Furthermore, we intend to target a competitive dividend payout ratio.

Our targets reflect our expectation of solid macroeconomic growth in 2019, with growth in the US specifically remaining strong, and no material distortions in foreign exchange rates. We also expect to benefit from a more normalized tax rate.

Our strategic goals are subject to various internal and external factors including those described above and to market, regulatory, economic and political uncertainties, and to limitations relating to our operating model. These could negatively impact or prevent the implementation of our strategic goals or the realization of their anticipated benefits. Economic uncertainties such as the recurrence of extreme turbulence in the markets; potential weakness in global, regional and national economic conditions; the continuation of a market environment characterized by low interest rates and low volatility; increased competition for business; and political instability, especially in Europe, may impact our ability to achieve our strategic goals. Regulatory changes could also adversely impact our ability to achieve our strategic aims. In particular, regulators could demand changes to our business model or organization that could reduce our profitability, or we may be forced to make changes that reduce our profitability in an effort to remain compliant with law and regulation. We are also involved in numerous litigation, arbitration and regulatory proceedings and investigations in Germany and in a number of jurisdictions outside of Germany, especially in the United States. Such matters are subject to many uncertainties. We expect the litigation environment to continue to be challenging. If litigation and regulatory matters occur at the same or higher rate and magnitude than they have in some recent years or if we are subject to sustained market speculation about our potential exposure to such matters, we may not be able to achieve our strategic aspirations.

The base case scenario for our financial and capital plan includes revenue growth estimates which are dependent on positive macroeconomic developments. Stagnation or a downturn in the macroeconomic environment could

significantly impact our ability to generate the revenue growth necessary to achieve these strategic financial and capital targets. While market conditions have improved as compared to those experienced in the fourth quarter of 2018, they are somewhat weaker than we had anticipated. Furthermore, even if we are able to grow our revenues in accordance with our strategic plans, the materialization of any of the regulatory changes or the costs for us – in terms of the outcomes or necessary changes to our businesses – of the litigation and regulatory matters mentioned above, including market speculation about our potential exposure to them, or any other unforeseen risk, could adversely impact our net income and thereby cause us to fall short of our strategic financial and capital targets.

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Our strategic objectives are also subject to the following assumptions and risks:

- We assume that we will be able to overcome significant challenges arising from our business model. We continue to rely on our trading and markets businesses as a significant source of profit. However, these businesses, in particular our fixed income securities franchise, have continued to face an extremely challenging environment, caused by uncertainty about the duration of the market environment characterized by low interest rates and low volatility, low levels of client activity, negative perceptions about our business and central bank intervention in markets and the gradual cessation thereof. We are substantially dependent on the performance of these businesses, and this dependency exceeds that of many of our competitors. Many of our businesses dependent on client flow are increasingly challenged in the current market environment. In addition, some of our businesses may be resistant to change, posing risks to the implementation of changes to our business model. Should we be unable to implement this new business model successfully, or should the new business model fail to be profitable, we may not be able to achieve some or all of our strategic goals.
- Asset and client levels were impacted by the negative market perceptions of Deutsche Bank in the fourth quarter 2016 and again in late 2018. A continued or renewed negative market focus on Deutsche Bank could result in new client and asset outflows.
- We currently operate a highly complex infrastructure, which can compromise the quality of the overall control environment. Establishing a more efficient bank with a strong control environment depends on successfully streamlining and simplifying the IT landscape as well as cultural change. Furthermore, capital and execution plans require robust monitoring and tracking that is dependent on accurate, timely and relevant data. We have undertaken initiatives designed to address existing challenges in our IT and data architecture as well as in our data aggregation capabilities. Potential delays and challenges to implementing these initiatives would impact our ability to achieve efficiency improvements and enhance the control environment, thereby affecting our ability to implement our strategy successfully.
- A robust and effective internal control environment is necessary to ensure that we conduct our business in compliance with the laws and regulations applicable to us. We are undertaking several major initiatives to enhance the efficacy of the transaction processing environment, strengthen our controls and manage non-financial risks, in particular as a response to the circumstances that have resulted in many of the litigations and regulatory and enforcement investigations and proceedings to which the Bank has been subject in recent years. However, we may be unable to complete these initiatives as quickly as we intend or as our regulators demand, and our efforts may be insufficient to prevent all future deficiencies in our control environment or to result in fewer litigations or regulatory and enforcement investigations and proceedings in the future. Furthermore, implementation of enhanced controls may result in higher than expected costs of regulatory compliance that could offset efficiency gains. Any of these factors could affect our ability to implement our strategy in a timely manner or at all.

If we fail to implement our strategic initiatives in whole or in part or should the initiatives that are implemented fail to produce the anticipated benefits, or should the costs we incur to implement our initiatives exceed the amounts anticipated, or should we fail to achieve the publicly communicated targets we have set for implementation of these

initiatives, we may fail to achieve our financial objectives, or incur losses or low profitability or erosions of our capital base, and our financial condition, results of operations and share price may be materially and adversely affected.

We may have difficulties selling companies, businesses or assets at favorable prices or at all and may experience material losses from these assets and other investments irrespective of market developments.

We may seek to sell or otherwise reduce our exposure to assets that are not part of our core business or as part of our strategy to simplify and focus our business and to meet or exceed capital and leverage requirements, as well as to help us meet our return on tangible equity target. This may prove difficult in the current and future market environment as many of our competitors are also seeking to dispose of assets to improve their capital and leverage ratios and returns on equity. We have already sold a substantial portion of our non-core assets, and our remaining non-core assets may be particularly difficult for us to sell as quickly as we have expected at prices we deem acceptable. Where we sell companies or businesses, we may remain exposed to certain of their losses or risks under the terms of the sale contracts, and the process of separating and selling such companies or businesses may give rise to operating risks or other losses. Unfavorable business or market conditions may make it difficult for us to sell companies, businesses or assets at favorable prices, or may preclude a sale altogether. If we cannot reduce our assets according to plan, we may not be able to achieve the capital targets set out under our strategy.

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Intense competition, in our home market of Germany as well as in international markets, has and could continue to materially adversely impact our revenues and profitability.

Competition is intense in all of our primary business areas, in Germany as well as in international markets. If we are unable to respond to the competitive environment in these markets with attractive product and service offerings that are profitable for us, we may lose market share in important areas of our business or incur losses on some or all of our activities. In addition, downturns in the economies of these markets could add to the competitive pressure, through, for example, increased price pressure and lower business volumes for us.

There has been substantial consolidation and convergence among financial services companies. This trend has significantly increased the capital base and geographic reach of some of our competitors and has hastened the globalization of the securities and other financial services markets. As a result, we must compete with financial institutions that may be larger and better capitalized than we are and that may have a stronger position in local markets.

In addition to our traditional competitors such as other universal banks and financial services firms, an emerging group of future competitors in the form of start-ups and technology firms are showing an increasing interest in banking services and products. These new competitors could increase competition in both core products, e.g., payments, basic accounts and loans and investment advisory, as well as in new products, e.g., peer to peer lending and equity crowd funding.

Risks Relating to Regulation and Supervision

Regulatory reforms enacted and proposed in response to weaknesses in the financial sector, together with increased regulatory scrutiny more generally, have had and continue to have a significant impact on us and may adversely affect our business and ability to execute our strategic plans. Competent regulators may prohibit us from making dividend payments or payments on our regulatory capital instruments or take other actions if we fail to comply with regulatory requirements.

In response to the global financial crisis and the European sovereign debt crisis, governments and regulatory authorities have worked to enhance the resilience of the financial services industry against future crises through changes to the regulatory framework. The pace of change of new proposals has slowed as the focus turns more to implementation of the various elements of the regulatory reform agenda outlined by the Basel Committee on Banking Supervision (“Basel Committee”) and other standard-setting bodies. As a result, there continues to be uncertainty for us and the financial industry in general, though the level of uncertainty is reduced from prior periods. The range of new laws and regulations or current proposals includes, among other things:

- provisions for more stringent regulatory capital, leverage and liquidity standards,
- restrictions on compensation practices,
- restrictions on proprietary trading and other investment services;
- special bank levies and financial transaction taxes,
- recovery and resolution powers to intervene in a crisis including the “bail-in” of creditors;
- tightened large exposure limits;
- the creation of a single supervisory authority and a single resolution authority within the eurozone and any other participating member states,
- separation of certain businesses from deposit taking,
- stress testing and capital planning regimes,
- heightened reporting requirements, and
- reforms of derivatives, other financial instruments, investment products and market infrastructures.

As a core element of the reform of the regulatory framework, in December 2010, the Basel Committee published a set of comprehensive changes to minimum capital adequacy and liquidity standards, known as Basel 3, which have been implemented into European and national (in our case, German) law beginning in 2014, with the European legislative package also referred to as “CRR/CRD 4” and the Bank Recovery and Resolution Directive (or “BRRD”).

In addition, regulatory scrutiny of compliance with existing laws and regulations has become more intense and supervisory expectations remain significant. The specific effects of a number of new laws and regulations remain uncertain because the drafting and implementation of these laws and regulations are still on-going and supervisory expectations continue to develop.

On November 23, 2016, the European Commission published a comprehensive package of reforms (referred to in the following as the “banking reform package”) to further strengthen the resilience of European Union banks. The proposals will incorporate various remaining elements of the regulatory framework agreed within the Basel Committee and the Financial Stability Board (“FSB”) to refine and supplement the global regulatory framework established by the Basel Committee, the so-called Basel Accords (Basel 1, 2 and 3). This includes more risk-sensitive capital requirements, in particular in the areas of market risk, counterparty credit risk, and for exposures to central counterparties, methodologies that reflect more accurately the actual risks to which banks may be exposed, a binding leverage ratio, a binding net stable funding ratio, tighter regulation of large exposures, and a requirement for global systemically important institutions (“G-SIIs”), such as Deutsche Bank, to hold certain minimum levels of capital and other instruments which are capable of bearing losses in resolution (“Total Loss-Absorbing Capacity” or “TLAC”). Other proposed measures are aimed at improving banks’ lending capacity to support the European Union economy and at further facilitating the role of banks in achieving deeper and more liquid European Union capital markets. On December 4, 2018, the European Parliament and the Council of the European Union reached a provisional political agreement with respect to the banking reform package. The banking reform package is expected to enter into force in the first half of 2019. While many provisions will not apply until 2021, certain parts, including the TLAC requirements, are expected to apply immediately when the provisions of the banking reform package enter into force.

Furthermore, in December 2017 the Basel Committee published its final agreement (“December 2017 Agreement”) on further revisions to the Basel 3 framework that aim to increase consistency in risk-weighted asset calculations and improve the comparability of banks’ capital ratios. The December 2017 Agreement includes, among other things, changes to the standardized and internal ratings-based approaches for determining credit risk, revisions to the operational risk framework, and an “output floor”, set at 72.5 %. The “output floor” limits the amount of capital benefit a bank can obtain from its use of internal models relative to using the standardized approach. This package of reforms is intended to finalize the Basel 3 framework and would reduce the ability of banks to apply internal models, while making the standardized approaches more risk-sensitive and granular. In addition, the December 2017 Agreement introduces a leverage ratio buffer for global systemically important banks (“G-SIBs”), such as Deutsche Bank, to be met with Tier 1 capital and sets it at 50 % of the applicable risk-based G-SIB buffer requirement. The Basel Committee also reached agreement on an implementation date for this package of January 1, 2022, with a phase-in period of five years through January 1, 2027 for the output floor.

The banking reform package, when it enters into force, will likely affect our business by raising our regulatory capital and liquidity requirements and by leading to increased costs. The December 2017 Agreement could also affect our business by imposing higher capital charges when adopted into law.

These requirements may be in addition to regulatory capital buffers that may also be increased or be in addition to those already imposed on us and could themselves materially increase our capital requirements.

Regulatory authorities have substantial discretion in how to regulate banks, and this discretion, and the means available to the regulators, have been steadily increasing during recent years. Regulation may be imposed on an ad hoc basis by governments and regulators in response to ongoing or future crises, and may especially affect financial institutions such as Deutsche Bank that are deemed to be systemically important.

In particular, the regulators with jurisdiction over us, including the ECB under the Single Supervisory Mechanism (also referred to as the “SSM”), may, in connection with the supervisory review and evaluation process (“SREP”) or otherwise, conduct stress tests and have discretion to impose capital surcharges on financial institutions for risks, including for litigation, regulatory and similar matters, that are not otherwise recognized in risk-weighted assets or other surcharges depending on the individual situation of the bank and take or require other measures, such as restrictions on or changes to our business. In this context, the ECB may impose, and has imposed, on us individual capital requirements resulting from the SREP which are referred to as “Pillar 2” requirements. “Pillar 2” requirements must be fulfilled with Common Equity Tier 1 capital in addition to the statutory minimum capital and buffer requirements and any non-compliance may have immediate legal consequences such as restrictions on dividend payments.

Also following the SREP, the ECB may communicate to individual banks, and has communicated to us, an expectation to hold a further “Pillar 2” Common Equity Tier 1 capital add-on, the so-called “Pillar 2” guidance. Although the “Pillar 2” guidance is not legally binding and failure to meet the “Pillar 2” guidance does not automatically trigger legal action, the ECB has stated that it expects banks to meet the “Pillar 2” guidance.

Also, more generally, competent regulators may, if we fail to comply with regulatory requirements, in particular with statutory minimum capital requirements, “Pillar 2” requirements or buffer requirements, or if there are shortcomings in our governance and risk management processes, prohibit us from making dividend payments to shareholders or distributions to holders of our other regulatory capital instruments. This could occur, for example, if we fail to make sufficient profits due to declining revenues, or as a result of substantial outflows due to litigation, regulatory and similar matters. Generally, a failure to comply with the quantitative and qualitative regulatory requirements could

have a material adverse effect on our business, financial condition and results of operations, including our ability to pay out dividends to shareholders or distributions on our other regulatory capital instruments or, in certain circumstances, conduct business which we currently conduct or plan to conduct in the future.

Regulatory and legislative changes require us to maintain increased capital and abide by tightened liquidity requirements. These requirements may significantly affect our business model, financial condition and results of operations as well as the competitive environment generally. Any perceptions in the market that we may be unable to meet our capital or liquidity requirements with an adequate buffer, or that we should maintain capital or liquidity in excess of these requirements or another failure to meet these requirements could intensify the effect of these factors on our business and results.

The implementation of the CRR/CRD 4 legislative package resulted, among other things, in increased capital and tightened liquidity requirements, including additional capital buffer requirements which were gradually phased in through January 1, 2019. Further revisions, such as stricter rules on the measurement of risks and the changes proposed by the banking reform package and the December 2017 Agreement, could further increase risk-weighted assets and the corresponding capital demand for banks, as well as further tighten liquidity requirements (such as the introduction of a binding net stable funding ratio). In addition, the introduction of a binding leverage ratio by the banking reform package may affect our business model, financial conditions and results of operations.

Furthermore, under the SRM Regulation, the BRRD and the German Recovery and Resolution Act (Sanierungs- und Abwicklungsgesetz), we are required to meet at all times a robust minimum requirement for own funds and eligible liabilities (“MREL”) which is determined on a case-by-case basis by the competent resolution authority. In addition, the banking reform package will implement the FSB’s TLAC standard for G-SIBs (such as us) by introducing a new Pillar 1 MREL requirement for G-SIIs (the European equivalent term for G-SIBs). This new requirement is based on both risk-based and non-risk-based denominators and is expected to be set at the higher of 18 % of total risk exposure and 6.75% of the leverage ratio exposure measure following a transition period. It can be met with Tier 1 or Tier 2 capital instruments or debt that meets specific eligibility criteria. Deduction rules will apply for holdings by G-SIIs of TLAC instruments of other G-SIIs. In addition, the competent authorities will have the ability to impose a TLAC add-on requirement on G-SIIs. Such new rules are expected to apply to us with the minimum requirement starting from the moment of entry into force of the banking reform package, i.e. expected in the first half of 2019.

Both the TLAC and MREL requirements are specifically designed to require banks to maintain a sufficient amount of instruments which are eligible to absorb losses in resolution with the aim of ensuring that failing banks can be resolved without recourse to taxpayers’ money. To that end, in order to facilitate the meeting of TLAC requirements by German banks, obligations of German banks under certain, specifically defined senior unsecured debt instruments issued by them (such as bonds that are not structured debt instruments) rank, since 2017, junior to all other outstanding unsecured unsubordinated obligations of such bank (such as deposits, derivatives, money market instruments and certain structured debt instruments), but continue to rank in priority to contractually subordinated debt instruments (such as Tier 2 instruments).

As part of the harmonization of national rules on the priority of claims of banks’ creditors in the European Union, the BRRD now allows banks to issue “senior non-preferred” debt instruments ranking according to their terms (and not only statutorily) junior to the bank’s other unsubordinated debt instruments (including bonds that are not treated as “senior non-preferred” debt instruments), but in priority to the bank’s contractually subordinated liabilities (such as Tier 2 instruments). Any such “senior non-preferred” debt instruments issued by Deutsche Bank AG under such rules rank on parity with its then outstanding “senior non-preferred” debt instruments under the prior rules. This BRRD amendment was finalized and implemented into German law as of July 21, 2018.

The need to comply with these requirements may affect our business, financial condition and results of operation and in particular may increase our financing costs.

We may not have sufficient capital or other loss-absorbing liabilities to meet these increasing regulatory requirements. This could occur due to regulatory changes and other factors, such as the gradual phase out of our hybrid capital instruments qualifying as Additional Tier 1 (or AT1) capital or our inability to issue new securities which are recognized as regulatory capital or loss-absorbing liabilities under the new standards, due to an increase of risk-weighted assets based on more stringent rules for the measurement of risks or as a result of a future decline in the value of the euro as compared to other currencies, due to stricter requirements for the compliance with the non-risk based leverage ratio, due to any substantial losses we may incur, which would reduce our retained earnings, a component of Common Equity Tier 1 capital, or due to a combination of these or other factors.

If we are unable to maintain sufficient capital to meet the applicable minimum capital ratios, the buffer requirements, any specific “Pillar 2” capital requirements or TLAC or MREL requirements, we may become subject to enforcement actions and/or restrictions on the pay-out of dividends, share buybacks, payments on our other regulatory capital instruments, and discretionary compensation payments. In addition, any requirement to increase risk-based capital ratios or the leverage ratio could lead us to adopt a strategy focusing on capital preservation and creation over revenue generation and profit growth, including the reduction of higher margin risk-weighted assets. If we are unable to increase our capital ratios to the regulatory minimum in such a case or by raising new capital through the capital markets, through the reduction of risk-weighted assets or through other means, we may be required to activate our group recovery plan. If these actions or other private or supervisory actions do not restore capital ratios to the required levels, and we are deemed to be failing or likely to fail, competent authorities may apply resolution powers under the Single Resolution Mechanism (“SRM”) and applicable rules and regulations, which could lead to a significant dilution of our shareholders’ or even the total loss of our shareholders’ or creditors’ investment.

The CRR introduced a new liquidity coverage requirement intended to ensure that banks have an adequate stock of unencumbered high quality liquid assets that can be easily and quickly converted into cash to meet their liquidity needs for a 30 calendar day liquidity stress scenario. The required liquidity coverage ratio (“LCR”) is calculated as the ratio of a bank’s liquidity buffer to its net liquidity outflows. Also, banks must regularly report the composition of the liquid assets in their liquidity buffer to their competent authorities.

In addition, the Basel 3 framework introduced a net stable funding ratio (“NSFR”) to reduce medium- to long-term funding risks by requiring banks to fund their activities with sufficiently stable sources of funding over a one-year period. The CRR contains interim reporting requirements on stable funding but does not yet include substantive provisions relating to the NSFR. Among the banking reform package is a proposal to introduce a binding NSFR. According to this proposal, the NSFR is defined as the ratio of a bank’s available stable funding relative to the amount of required stable funding over a one-year period. According to the proposal, banks must maintain an NSFR of at least 100 %.

The ECB may impose on individual banks liquidity requirements which are more stringent than the general statutory requirements if the bank’s continuous liquidity would otherwise not be ensured.

On February 6, 2019, the ECB launched a liquidity stress testing exercise. The exercise will constitute the supervisory stress test of 2019. The results of the exercise will feed into the ECB’s ongoing supervisory assessments of banks’ liquidity risk management frameworks, including the SREP. However, the outcome of the stress test will not affect supervisory capital and liquidity requirements in a mechanical way.

If we fail to meet liquidity requirements, we may become subject to enforcement actions. In addition, any requirement to maintain or increase liquidity could lead us to reduce activities that pursue revenue generation and profit growth.

In some cases, we are required to hold and calculate capital and to comply with rules on liquidity and risk management separately for our local operations in different jurisdictions, in particular in the United States.

We are required to hold and calculate capital and to comply with rules on liquidity and risk management separately for our local operations in different jurisdictions. In the United States, the Federal Reserve Board has adopted rules that impose enhanced prudential standards on our US operations. In February 2014, the Federal Reserve Board adopted rules that set forth how the US operations of certain foreign banking organizations (“FBOs”), such as Deutsche Bank, are required to be structured in the United States, as well as the enhanced prudential standards that apply to our US operations (the “FBO Rules”). Under the FBO Rules, as of July 1, 2016, a large FBO with US\$ 50 billion or more in US non-branch assets, such as Deutsche Bank, was required to establish or designate a separately capitalized top-tier US intermediate holding company (an “IHC”) that would hold substantially all of the FBO’s ownership interests in its US subsidiaries. The Federal Reserve Board may permit an FBO subject to the US IHC requirement to establish or designate multiple US IHCs upon written request. On July 1, 2016, we designated DB USA Corporation as our IHC. In March 2018, we completed the partial initial public offering of our Asset Management division, to form DWS Group GmbH & Co. KGaA (“DWS”), in which we retain approximately 80 % of the shares. In April 2018, DWS USA Corporation was formed as a subsidiary of DWS, and, following receipt of Federal Reserve Board approval, we designated it as our second IHC, through which our US asset management subsidiaries are held. As of the date of designation or formation of each of these IHCs, they each became subject, on a consolidated basis, to the risk-based and leverage capital requirements under the US Basel 3 capital framework, capital planning and stress testing requirements (on a phased-in basis), US liquidity buffer requirements and other enhanced prudential standards comparable to those applicable to top-tier US bank holding companies of a similar size. Supplementary leverage ratio requirements applicable to DB USA Corporation took effect beginning in January 2018 and were applicable to DWS USA Corporation upon its formation. The Federal Reserve Board has the authority to examine an IHC, such as DB USA Corporation and DWS USA Corporation, and its subsidiaries, as well as US branches and agencies of FBOs, such as our New York branch.

As a bank holding company with assets of US\$ 250 billion or more, Deutsche Bank AG is required under Title I of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, as amended (the “Dodd-Frank Act”), and the implementing regulations therefor to prepare and submit periodically to the Federal Reserve Board and the Federal Deposit Insurance Corporation (“FDIC”) a plan for the orderly resolution of its subsidiaries and operations in the event of future material financial distress or failure (the “US Resolution Plan”). For foreign-based companies subject to these resolution planning requirements such as Deutsche Bank AG, the US Resolution Plan relates only to subsidiaries, branches, agencies and businesses that are domiciled in or whose activities are carried out in whole or in material part in the United States. Deutsche Bank AG filed its most recent US Resolution Plan in June 2018 and received written regulatory feedback in December 2018. The Federal Reserve Board and FDIC found that Deutsche Bank’s US Resolution Plan had no deficiencies but identified one shortcoming in the plan, associated with governance mechanisms and related escalation triggers. Deutsche Bank is required to submit a response to its December 2018 feedback letter by April 5, 2019. Deutsche Bank’s response will discuss the remediation of the shortcoming as well as enhancements of its resolution capabilities. Both the remediation of the shortcoming and enhancements must be completed prior to the submission of our next US Resolution Plan, which is currently expected to be due on July 1, 2020. If the Federal Reserve Board and the FDIC were to jointly deem our US Resolution Plan not credible and we failed to remedy the deficiencies in the required timeframe, we could be required to restructure or reorganize businesses, legal entities, operational systems and/or intra-company transactions in ways that may negatively impact our operations and strategy, or could be subject to restrictions on growth. We could also eventually be subjected to more stringent capital, leverage or liquidity requirements, or be required to divest certain assets or operations.

DB USA Corporation was subject to the Federal Reserve Board's Comprehensive Capital Analysis and Review ("CCAR") for 2018. On June 28, 2018, the Federal Reserve Board publicly indicated that it did not object to DB USA Corporation's 2018 capital plan on a quantitative basis, but that it did object for qualitative reasons. As a result of the Federal Reserve's objection, DB USA Corporation may not make any capital distribution unless the Federal Reserve has indicated in writing its non-objection to the distribution. DB USA Corporation's stressed Common Equity Tier 1 capital ratio was forecast by the Federal Reserve Board to fall to as low as 12.2 % under the supervisory severely adverse scenario. This hypothetical stressed ratio would be substantially above the minimum required ratio of 4.5 %. Stress testing results are based on hypothetical adverse scenarios and should not be viewed or interpreted as forecasts of expected outcomes or capital adequacy or of the actual financial condition of DB USA Corporation. DB USA Corporation will make its next capital plan submission to the Federal Reserve Board in April 2019, at which time DWS USA Corporation will submit its initial capital plan to the Federal Reserve Board. If the Federal Reserve Board were to object to these capital plans we could be required to increase capital or restructure businesses in ways that may negatively impact our operations and strategy or could be subject to restrictions on growth.

The US federal bank regulators in 2013 issued final rules implementing elements of the Basel 3 capital adequacy framework that are applicable to US banking organizations.

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In September 2014, the Federal Reserve Board and other US regulators approved a final rule implementing liquidity coverage ratio ("LCR") requirements for large US banking holding companies and certain of their subsidiary depository institutions that are generally consistent with the Basel Committee's revised Basel 3 liquidity standards. DB USA Corporation and our US bank subsidiary, Deutsche Bank Trust Company Americas ("DBTCA"), became subject to the full LCR requirements on April 1, 2017 and DWS USA Corporation became subject to LCR requirements on a phased-in basis upon its formation in April 2018.

On June 1, 2016, the Federal Reserve Board and other US regulators proposed rules implementing the second element of the Basel 3 liquidity framework, the net stable funding ratio ("NSFR"), which measures whether an institution maintains sufficiently stable amounts of longer-term funding. Under the proposed rules, DB USA Corporation, DWS USA Corporation and DBTCA would be subject to the full NSFR, but this proposal has yet to be finalized and is not yet in effect.

On December 15, 2016, the Federal Reserve Board adopted final rules that implement the FSB's TLAC standard in the United States. The final rules, which took effect on January 1, 2019, require, among other things, US IHCs of non-US G-SIBs, including our IHCs, DB USA Corporation and DWS USA Corporation, to maintain a minimum amount of TLAC, and separately require them to maintain a minimum amount of long-term debt meeting certain requirements.

US rules and interpretations, including those described above, could cause us to reduce assets held in the United States, inject capital and/or liquidity into or otherwise change the structure of our US operations, and could also restrict the ability of our US subsidiaries to pay dividends to us. To the extent that we are required to reduce operations in the United States or deploy capital in the United States that could be deployed more profitably elsewhere, these requirements could have an adverse effect on our business, financial condition and results of operations.

Any increased capital or liquidity requirements, including those described above, could have adverse effects on our business, financial condition and results of operations, as well as on perceptions in the market of our stability, particularly if any such proposal becomes effective and results in our having to raise capital at a time when we or the financial markets are distressed, or take other measures to increase liquidity in certain jurisdictions due to local requirements. These measures we might be required or find necessary to take in response to these shifting local

requirements may be inconsistent with, and hinder the achievement of our strategic goals. In addition, if these regulatory requirements must be implemented more quickly than currently foreseen, we may decide that the quickest and most reliable path to compliance is to reduce the level of assets on our balance sheet, dispose of divisions or otherwise segregate certain activities or reduce or close down certain business lines. The effects on our capital raising efforts in such a case could be amplified due to the expectation that our competitors, at least those subject to the same or similar capital requirements, would likely also be required to raise capital at the same time. Moreover, some of our competitors, particularly those outside the European Union, may not face the same or similar regulations, which could put us at a competitive disadvantage.

In addition to these regulatory initiatives, market sentiment may encourage financial institutions such as Deutsche Bank to maintain significantly more capital, liquidity and loss-absorbing capital instruments than regulatory-mandated minima, which could exacerbate the effects on us described above or, if we do not increase our capital to the encouraged levels, could lead to the perception in the market that we are undercapitalized relative to our peers generally.

It is unclear whether the US capital and other requirements described above, as well as similar developments in other jurisdictions could lead to a fragmentation of supervision of global banks that could adversely affect our reliance on regulatory waivers allowing us to meet capital adequacy requirements, large exposure limits and certain organizational requirements on a consolidated basis only rather than on both a consolidated and non-consolidated basis. Should we no longer be entitled to rely on these waivers, we would have to adapt and take the steps necessary in order to meet regulatory capital requirements and other requirements on a consolidated as well as a non-consolidated basis, which could result also in significantly higher costs and potential adverse effects on our profitability and dividend paying ability.

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Our regulatory capital and liquidity ratios and our funds available for distributions on our shares or regulatory capital instruments will be affected by our business decisions and, in making such decisions, our interests and those of the holders of such instruments may not be aligned, and we may make decisions in accordance with applicable law and the terms of the relevant instruments that result in no or lower payments being made on our shares or regulatory capital instruments.

Our regulatory capital and liquidity ratios are affected by a number of factors, including decisions we make relating to our businesses and operations as well as the management of our capital position, of our risk-weighted assets and of our balance sheet in general, and external factors, such as regulations regarding the risk weightings we are permitted to allocate to our assets, commercial and market risks or the costs of our legal or regulatory proceedings. While we and our management are required to take into account a broad range of considerations in our and their managerial decisions, including the interests of the Bank as a regulated institution and those of our shareholders and creditors, particularly in times of weak earnings and increasing capital requirements, the regulatory requirements to build capital and liquidity may become paramount. Accordingly, in making decisions in respect of our capital and liquidity management, we are not required to adhere to the interests of the holders of instruments we have issued that qualify for inclusion in our regulatory capital, such as our shares or Additional Tier 1 capital instruments. We may decide to refrain from taking certain actions, including increasing our capital at a time when it is feasible to do so (through securities issuances or otherwise), even if our failure to take such actions would result in a non-payment or a write-down or other recovery- or resolution-related measure in respect of any of our regulatory capital instruments. Our decisions could cause the holders of such regulatory capital instruments to lose all or part of the value of their investments in these instruments due to their effect on our regulatory capital ratios, and such holders will not have any claim against us relating to such decisions, even if they result in a non-payment or a write-down or other recovery- or resolution-related measure in respect of such instruments they hold.

In addition, our annual profit and distributable reserves form an important part of the funds available for us to pay dividends on our shares and make payments on our other regulatory capital instruments, as determined in the case of each such instrument by its terms or by operation of law, and any adverse change in our financial prospects, financial position or profitability, or our distributable reserves, each as calculated on an unconsolidated basis, may have a material adverse effect on our ability to make dividend or other payments on these instruments. In addition, as part of the implementation of our strategy, we may record impairments that reduce the carrying value of subsidiaries on our unconsolidated balance sheet and reduce profits and distributable reserves. Future impairments or other events that reduce our profit or distributable reserves on an unconsolidated basis could lead us to be unable to make such payments in respect of future years in part or at all. In particular, the direct costs of our potential settlements of litigation, enforcement and similar matters, especially to the extent in excess of provisions we have established for them, and their related business impacts, if they occur, could impact such distributable amounts.

In addition, German law places limits on the extent to which annual profits and otherwise-distributable reserves, as calculated on an unconsolidated basis, may be distributed to our shareholders or the holders of our other regulatory capital instruments, such as our Additional Tier 1 capital instruments. Our management also has, subject to applicable law, broad discretion under the applicable accounting principles to influence all amounts relevant for calculating funds available for distribution. Such decisions may impact our ability to make dividend or other payments under the terms of our regulatory capital instruments.

European and German legislation regarding the recovery and resolution of banks and investment firms could, if steps were taken to ensure our resolvability or resolution measures were imposed on us, significantly affect our business operations, and lead to losses for our shareholders and creditors.

Germany participates in the SRM, which centralizes at a European level the key competences and resources for managing the failure of any bank in member states of the European Union participating in the banking union. The SRM is based on the SRM Regulation and the BRRD, which was implemented in Germany through the German Recovery and Resolution Act. In addition, the German Resolution Mechanism Act (Abwicklungsmechanismengesetz) adapted German bank resolution laws to the SRM.

The SRM Regulation and the German Recovery and Resolution Act require the preparation of recovery and resolution plans for banks and grant broad powers to public authorities to intervene in a bank which is failing or likely to fail. For a bank directly supervised by the ECB, such as Deutsche Bank, the Single Resolution Board (referred to as the “SRB”) assesses its resolvability and may require legal and operational changes to the bank’s structure to ensure its resolvability. In the event that such bank is deemed by the ECB or the SRB as failing or likely to fail and certain other conditions are met, the SRB is responsible for adopting a resolution scheme for resolving the bank pursuant to the SRM Regulation. The European Commission and, to a lesser extent, the Council of the European Union, have a role in endorsing or objecting to the resolution scheme proposed by the SRB. The resolution scheme would be addressed to and implemented by the competent national resolution authorities (in Germany, the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, “BaFin”)) in line with the national laws implementing the BRRD. Resolution measures that could be imposed upon a bank in resolution may include the transfer of shares, assets or liabilities of the bank to another legal entity, the reduction, including to zero, of the nominal value of shares, the dilution of shareholders or the cancellation of shares outright, or the amendment, modification or variation of the terms of the bank’s outstanding debt instruments, for example by way of a deferral of payments or a reduction of the applicable interest rate. Furthermore, certain eligible unsecured liabilities, in particular certain senior “non-preferred” debt instruments specified by the German Banking Act, may be written down, including to zero, or converted into equity (commonly referred to as “bail-in”) if the bank becomes subject to resolution.

The SRM is intended to eliminate, or reduce, the need for public support of troubled banks. Therefore, financial public support for such banks, if any, would be used only as a last resort after having assessed and exploited, to the maximum extent practicable, the resolution powers, including a bail-in. The taking of actions to ensure our resolvability or the exercise of resolution powers by the competent resolution authority could materially affect our business operations and lead to a significant dilution of our shareholders or even the total loss of our shareholders' or creditors' investment.

Other regulatory reforms adopted or proposed in the wake of the financial crisis – for example, extensive new regulations governing our derivatives activities, compensation, bank levies, deposit protection, data protection or a possible financial transaction tax – may materially increase our operating costs and negatively impact our business model.

Beyond capital requirements and the other requirements discussed above, we are affected, or expect to be affected, by various additional regulatory reforms, including, among other things, regulations governing our derivatives activities, compensation, bank levies, deposit protection, data protection or a possible financial transaction tax.

On August 16, 2012, the EU Regulation on over-the-counter (“OTC”) derivatives, central counterparties and trade repositories, referred to as European Market Infrastructure Regulation (“EMIR”), entered into force. EMIR introduced a number of requirements, including clearing obligations for certain classes of OTC derivatives and various reporting and disclosure obligations. EMIR implementation has led and may lead to changes that may negatively impact our profit margins. The revised Markets in Financial Instruments Directive (“MiFID 2”) and the corresponding Regulation (“MiFIR”) became applicable to us on January 3, 2018 and provide for, among other things, a trading obligation for those OTC derivatives which are subject to mandatory clearing and which are sufficiently standardized.

In the United States, the Dodd-Frank Act has numerous provisions that affect or may affect our operations. Pursuant to regulations implementing provisions of the Dodd-Frank Act, we provisionally registered as a swap dealer with the US Commodity Futures Trading Commission (“CFTC”) and became subject to the CFTC’s extensive oversight. Regulation of swap dealers by the CFTC imposes numerous corporate governance, business conduct, capital, margin, reporting, clearing, execution and other regulatory requirements on us. It also requires us to comply with certain US rules in some circumstances with respect to transactions conducted outside of the United States or with non-US persons. Although the coverage of EMIR and CFTC regulations implementing the Dodd-Frank Act is in many ways similar, certain swaps may be subject to both regulatory regimes to a significant extent. However, pursuant to the CFTC’s guidance on cross-border swaps regulation, there may be instances where we can comply with the requirements of EMIR and MiFID in lieu of complying with the CFTC’s requirements. The requirements under the Dodd-Frank Act may adversely affect our derivatives business and make us less competitive, especially as compared to competitors not subject to such regulation. Additionally, under the Dodd-Frank Act, security-based swaps are subject to a standalone regulatory regime under the jurisdiction of the US Securities and Exchange Commission (“SEC”). The SEC is finalizing rules for its security-based swap regime that are expected to be parallel to, but not identical to, the CFTC’s regulation of swaps. This will impose further regulation of our derivatives business.

In addition, the CRR/CRD 4 legislative package provides for executive compensation reforms including caps on bonuses that may be awarded to “material risk takers” and other employees as defined therein and in the German Banking Act and other applicable rules and regulations such as the Remuneration Regulation for Institutions (Institutsvergütungsverordnung). Such restrictions on compensation, including any guidelines issued by the European Banking Authority to further implement them, could put us at a disadvantage to our competitors in attracting and retaining talented employees, especially compared to those outside the European Union that are not subject to these caps and other constraints.

Following the financial crisis, bank levies have been introduced in some countries including, among others, Germany and the United Kingdom. We accrued € 690 million for bank levies in 2018, € 596 million in 2017 and € 547 million in 2016. Also, we are required to contribute substantially to the Single Resolution Fund under the SRM (which is intended to reach a target level of 1 % of insured deposits of all banks in member states participating in the SRM by the end of 2023) and the statutory deposit guarantee and investor compensation schemes under the recast European Union directive on deposit guarantee schemes (“DGS Directive”) and the European Union directive on investor compensation schemes. The DGS Directive defines a 0.8 % target level of prefunding by 2024 (similar to resolution funds), which has significantly increased the costs of the statutory deposit protection scheme. In addition, in this context, on November 24, 2015, the European Commission proposed a regulation to establish a European Deposit Insurance Scheme, or “EDIS”, for bank deposits of all credit institutions that are members of any of the current national statutory deposit guarantee schemes of member states participating in the banking union. While the total impact of these future levies cannot currently be quantified, they may have a material adverse effect on our business, financial condition and results of operations in future periods.

The General Data Protection Regulation (“GDPR”) became applicable in the European Union on May 25, 2018. It relates to data protection and privacy rights of individuals within the European Union and addresses the export of personal data to other jurisdictions. The GDPR primarily aims at giving individuals control over their personal data and to unifying the regulatory environment for cross-border business. The GDPR contains provisions and requirements pertaining to the processing of personal data of individuals and also applies to businesses inside the European Union that are processing personal data. The regulation furthermore applies to businesses outside of the European Union if goods or services are offered to data subjects in the European Union, or if the behavior of data subjects in the European Union is being monitored. The GDPR imposes compliance obligations and grants broad enforcement powers to supervisory authorities, including the potential to levy significant fines for non-compliance.

Separately, on January 22, 2013, the Council of the European Union adopted a decision authorizing eleven EU member states (Austria, Belgium, Estonia, France, Germany, Greece, Italy, Portugal, Slovakia, Slovenia and Spain) to proceed with the introduction of a financial transaction tax under the European Union’s “enhanced cooperation procedure”. The European Commission on February 14, 2013 adopted a draft directive for the implementation of the financial transaction tax. Following several rounds of political discussions there is currently no timetable for the conclusion of an agreement. If a financial transaction tax is ultimately adopted, depending on its final details, it could result in compliance costs as well as market consequences and have a material adverse effect on our profit and business.

Risks Relating to Our Internal Control Environment

A robust and effective internal control environment and adequate infrastructure (comprising people, policies and procedures, controls testing and IT systems) are necessary to ensure that we conduct our business in compliance with the laws, regulations and associated supervisory expectations applicable to us. We have identified the need to strengthen our internal control environment and infrastructure and have embarked on initiatives to accomplish this. If these initiatives are not successful or are delayed, our reputation, regulatory position and financial condition may be materially adversely affected, and our ability to achieve our strategic ambitions may be impaired.

Our businesses are highly dependent on our ability to maintain a robust and effective internal control environment. This is needed for the Bank to process and monitor, on a daily basis, a wide variety of transactions, many of which are highly complex and occur at high speeds, volumes and frequencies, and across numerous and diverse markets and currencies. Such a robust and effective control environment is in turn dependent on the sufficiency of our infrastructure to support that environment. This infrastructure consists broadly of internal policies and procedures, testing protocols, and the IT systems and employees needed to enforce and enable them. An effective control environment is dependent on infrastructure systems and procedures that cover the processing and settling of transactions; the valuation of assets; the identification, monitoring, aggregation, measurement and reporting of risks and positions against various metrics; the evaluation of counterparties and customers for legal, regulatory and

compliance purposes; the escalation of reviews; and the taking of mitigating and remedial actions where necessary. They are also critical for regulatory reporting and other data processing and compliance activities.

Both our internal control environment and the infrastructure that underlies it fall short in a number of areas of our standards for completeness and comprehensiveness and are not well integrated across the Bank. Our IT infrastructure, in particular, is fragmented, with numerous distinct platforms, many of which need significant upgrades, in operation across the Bank. Our business processes and the related control systems often require manual procedures and actions that increase the risks of human error and other operational problems that can lead to delays in reporting information to management and to the need for more adjustments and revisions than would be the case with more seamlessly integrated and automated systems and processes. As a result, it is often difficult and labor-intensive for us to obtain or provide information of a consistently high quality and on a timely basis to comply with regulatory reporting and other compliance requirements or to meet regulatory expectations on a consistent basis and, in certain cases, to manage our risk comprehensively. Furthermore, it often takes intensive efforts to identify, when possible, inappropriate behavior by our staff and attempts by third parties to misuse our services as a conduit for prohibited activities, including those relating to anti-financial crime laws and regulation.

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In addition, we may not always have the personnel with the appropriate experience, seniority and skill levels to compensate for shortcomings in our processes and infrastructure, or to identify, manage or control risks, and it often has been difficult to attract and retain the requisite talent. This has impacted our ability to remediate existing weaknesses and manage the risks inherent in our activity.

Against this backdrop, our regulators, our Management Board and our Group Audit function have increasingly and more intensively focused on our internal controls and infrastructure through numerous formal reviews and audits of our operations. These reviews and audits have identified various areas for improvement relating to a number of elements of our control environment and infrastructure. These include the infrastructure relating to transaction capturing and recognition, classification of assets, asset valuation frameworks, data and process consistency, risk identification, measurement and management and other processes required by laws, regulations, and supervisory expectations. They also include regulatory reporting, anti-money laundering (AML), “know your customer” (KYC) and other internal processes that are aimed at preventing use of our products and services for the purpose of committing or concealing financial crime. As one example, our January 2017 settlement with the UK FCA relating to trading activities involving our Russian operations stemmed in part from the FCA’s review of the AML control functions in our investment bank.

Our principal regulators, including the BaFin, the ECB and the Federal Reserve Board, have also conducted numerous reviews focused on our internal controls and the related infrastructure. These regulators have required us formally to commit to remediate our AML and other weaknesses, including the fragmented and manual nature of our infrastructure. For example, on September 21, 2018, the BaFin issued an order requiring us to implement measures on specified timelines over the coming months and years to improve our control and compliance infrastructure relating to AML and, in particular, the know-your-client (KYC) processes in CIB. Local regulators in other countries in which we do business also review the sufficiency of our control environment and infrastructure with respect to their jurisdictions. While the overall goals of the various prudential regulators having authority over us in the many places in which we do business are broadly consistent, and the general themes of our deficiencies in internal controls and the supporting infrastructure are similar, the regulatory frameworks applicable to us in the area of internal controls are generally applicable at a national or EU-wide level and are not always consistent across the jurisdictions in which we operate around the world. This adds complexity and cost to our efforts to reduce fragmentation and put in place automated systems that communicate seamlessly and quickly with one another.

In order to improve in the areas discussed above, we are undertaking several major initiatives to enhance the efficacy of the transaction processing environment, strengthen our controls and infrastructure, manage non-financial risks and

enhance the skill set of our personnel. We believe that these initiatives will better enable us to avoid the circumstances that have resulted in many of the litigations and regulatory and enforcement investigations and proceedings to which we have recently been subject, and will improve our ability to comply with laws and regulations and meet supervisory expectations. In particular, we are making efforts to reduce the complexity of our business and to integrate and automate processes and business and second-line controls. We have also exited certain businesses, for example in Russia, and high-risk countries, selectively off-boarded a number of clients, worked to strengthen our compliance culture and control functions and increased the size of and strengthened our Group Audit function. However, we may be unable to complete these initiatives as quickly as we intend or as our regulators demand, and our efforts may be insufficient to remediate existing deficiencies and prevent future deficiencies or to result in fewer litigations or regulatory and enforcement investigations, proceedings and criticism in the future. We may also, when faced with the considerable expense of these initiatives, fail to provide sufficient resources for them quickly enough or at all, especially during periods when our operating performance and profitability are challenged. If we are unable to significantly improve our infrastructure and control environment in a timely manner, we may determine to or some of our regulators may require us to reduce our exposure to or terminate certain kinds of products or businesses, counterparties or regions, which could, depending on the extent of such requirement, significantly challenge our ability to operate profitably under our current business model.

Regulators can also impose capital surcharges, requiring capital buffers in addition to those directly required under the regulatory capital rules applicable to us, to reflect the additional risks posed by deficiencies in our control environment. In extreme cases, regulators can suspend our permission to operate in the businesses and regions within their jurisdictions or require extensive and costly remedial actions. Furthermore, implementation of enhanced infrastructure and controls may result in higher-than-expected costs of regulatory compliance that could offset or exceed efficiency gains or significantly affect our profitability. Any of these factors could affect our ability to implement our strategy in a timely manner or at all.

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The BaFin has ordered us to improve our control and compliance infrastructure relating to anti-money laundering and know-your-client processes in CIB, and appointed a special representative to monitor these measures' implementation. Our results of operations, financial condition and reputation could be materially and adversely affected if we are unable to significantly improve our infrastructure and control environment by the set deadline.

On September 21, 2018, the BaFin issued an order requiring us to implement measures on specified timelines over the coming months and years to improve our control and compliance infrastructure relating to AML and, in particular, the KYC processes in CIB. The BaFin also appointed KPMG as special representative, reporting to the BaFin on a quarterly basis on certain aspects of our compliance and progress with the implementation of these measures. In February 2019, the BaFin extended the special representative's mandate to cover our internal controls in the correspondent banking business. Our AML and KYC processes, as well as our other internal processes that are aimed at preventing use of our products and services for the purpose of committing or concealing financial crime and our personnel responsible for our efforts in these areas, continue to be the subject of regulatory scrutiny in a number of jurisdictions. If we are unable to significantly improve our infrastructure and control environment by the set deadline, our results of operations, financial condition and reputation could be materially and adversely affected. For example, some of our regulators, such as BaFin, would likely impose fines or require us to reduce our exposure to or terminate certain kinds of products or businesses or relationships with counterparties or regions, which could, depending on the extent of such requirement, significantly challenge our ability to operate profitably under our current business model.

Risks Relating to Litigation, Regulatory Enforcement Matters and Investigations

We operate in a highly and increasingly regulated and litigious environment, potentially exposing us to liability and other costs, the amounts of which may be substantial and difficult to estimate, as well as to legal and regulatory sanctions and reputational harm.

The financial services industry is among the most highly regulated industries. Our operations throughout the world are regulated and supervised by the central banks and regulatory authorities in the jurisdictions in which we operate. In recent years, regulation and supervision in a number of areas has increased, and regulators, law enforcement authorities, governmental bodies and others have sought to subject financial services providers to increasing oversight and scrutiny, which in turn has led to additional regulatory investigations or enforcement actions. This trend has accelerated markedly as a result of the global financial crisis and the European sovereign debt crisis. There has been a steep escalation in the severity of the terms which regulators and law enforcement authorities have required to settle legal and regulatory proceedings against financial institutions, with settlements in recent years including unprecedented monetary penalties as well as criminal sanctions. As a result, we may continue to be subject to increasing levels of liability and regulatory sanctions, and may be required to make greater expenditures and devote additional resources to addressing these liabilities and sanctions. Regulatory sanctions may include status changes to local licenses or orders to discontinue certain business practices.

We and our subsidiaries are involved in various litigation proceedings, including civil class action lawsuits, arbitration proceedings and other disputes with third parties, as well as regulatory proceedings and investigations by both civil and criminal authorities in jurisdictions around the world. We expect that the costs to us arising from the resolution of litigation, enforcement and similar matters pending against us to continue to be significant in the near to medium term and to adversely affect our business, financial condition and results of operations. Litigation and regulatory matters are subject to many uncertainties, and the outcome of individual matters is not predictable with assurance. We may settle litigation or regulatory proceedings prior to a final judgment or determination of liability. We may do so for a number of reasons, including to avoid the cost, management efforts or negative business, regulatory or reputational consequences of continuing to contest liability, even when we believe we have valid defenses to liability. We may also do so when the potential consequences of failing to prevail would be disproportionate to the costs of settlement. Furthermore, we may, for similar reasons, reimburse counterparties for their losses even in situations where we do not believe that we are legally compelled to do so. The financial impact of legal risks might be considerable but may be difficult or impossible to estimate and to quantify, so that amounts eventually paid may exceed the amount of provisions made or contingent liabilities assessed for such risks.

Actions currently pending against us or our current or former employees may not only result in judgments, settlements, fines or penalties, but may also cause substantial reputational harm to us. The risk of damage to our reputation arising from such proceedings is also difficult or impossible to quantify.

Regulators have increasingly sought admissions of wrongdoing in connection with settlement of matters brought by them. This could lead to increased exposure in subsequent civil litigation or in consequences under so-called "bad actor" laws, in which persons or entities determined to have committed offenses under some laws can be subject to limitations on business activities under other laws, as well as adverse reputational consequences. In addition, the DOJ conditions the granting of cooperation credit in civil and criminal investigations of corporate wrongdoing on the company involved having provided to investigators all relevant facts relating to the individuals responsible for the alleged misconduct. This policy may result in increased fines and penalties if the DOJ determines that we have not provided sufficient information about applicable individuals in connection with an investigation. Other governmental authorities could adopt similar policies.

In addition, the financial impact of legal risks arising out of matters similar to some of those we face have been very large for a number of participants in the financial services industry, with fines and settlement payments greatly exceeding what market participants may have expected and, as noted above, escalating steeply over the last few years

to unprecedented levels. The experience of others, including settlement terms, in similar cases is among the factors we take into consideration in determining the level of provisions we maintain in respect of these legal risks.

Developments in cases involving other financial institutions in recent years have led to greater uncertainty as to the predictability of outcomes and could lead us to add to our provisions. Moreover, the costs of our investigations and defenses relating to these matters are themselves substantial. Further uncertainty may arise as a result of a lack of coordination among regulators from different jurisdictions or among regulators with varying competencies in a single jurisdiction, which may make it difficult for us to reach concurrent settlements with each regulator. Should we be subject to financial impacts arising out of litigation and regulatory matters to which we are subject in excess of those we have calculated in accordance with our expectations and the relevant accounting rules and contrary to our publicly communicated expectation that 2015 and 2016 were peak years for the financial impact of litigation and regulatory matters, our provisions in respect of such risks may prove to be materially insufficient to cover these impacts. This could have a material adverse effect on our results of operations, financial condition or reputation as well as on our ability to maintain capital, leverage and liquidity ratios at levels expected by market participants and our regulators. In such an event, we could find it necessary to reduce our risk-weighted assets (including on terms disadvantageous to us) or substantially cut costs to improve these ratios, in an amount corresponding to the adverse effects of the provisioning shortfall.

We are currently the subject of industry-wide investigations by regulatory and law enforcement agencies relating to interbank and dealer offered rates, as well as civil actions. Due to a number of uncertainties, including those related to the high profile of the matters and other banks' settlement negotiations, the eventual outcome of these matters is unpredictable, and may materially and adversely affect our results of operations, financial condition and reputation.

We have responded to requests for information from, and cooperated with, various regulatory and law enforcement agencies in connection with industry-wide investigations concerning the setting of the London Interbank Offered Rate (LIBOR), Euro Interbank Offered Rate (EURIBOR), Tokyo Interbank Offered Rate (TIBOR) and other interbank and dealer offered rates. The investigations underway have the potential to result in the imposition of significant financial penalties and other consequences for the Bank.

As previously reported, we paid € 725 million to the European Commission pursuant to a settlement agreement dated December 4, 2013 in relation to anticompetitive conduct in the trading of interest rate derivatives. Also as previously reported, on April 23, 2015, we reached settlements with the DOJ, the CFTC, FCA, and the New York State Department of Financial Services ("DFS") to resolve investigations into misconduct concerning the setting of LIBOR, EURIBOR, and TIBOR. Under the terms of these agreements, we agreed to pay penalties of US\$ 2.175 billion to the DOJ, CFTC and DFS and GBP 226.8 million to the FCA. As part of the resolution with the DOJ, DB Group Services (UK) Limited, (an indirectly-held, wholly-owned subsidiary of ours) pled guilty to one count of wire fraud in the US District Court for the District of Connecticut and we entered into a Deferred Prosecution Agreement with a three year term, which expired in 2018. On October 25, 2017, we entered into a settlement with a working group of US state attorneys general resolving their interbank offered rate investigation. Among other conditions, we made a settlement payment of US\$ 220 million. The factual admissions we have made in connection with these settlements could make it difficult for us to defend against pending and future claims. Other investigations of us concerning the setting of various interbank offered rates remain ongoing.

In addition, we are party to 45 US civil actions concerning alleged manipulation relating to the setting of various interbank and/or dealer offered rates, as well as single actions pending in each of the UK, Israel and Argentina. Most of the civil actions, including putative class actions, are pending in the US District Court for the Southern District of New York (SDNY), against us and numerous other defendants. All but four of the US civil actions were filed on behalf of parties who allege losses as a result of manipulation relating to the setting of US dollar LIBOR. The four civil actions pending against us that do not relate to US dollar LIBOR are also pending in the SDNY, and include one consolidated action concerning Pound Sterling (GBP) LIBOR, one action concerning Swiss franc (CHF) LIBOR, one action concerning two Singapore Dollar (SGD) benchmark rates, the Singapore Interbank Offered Rate (SIBOR) and the Swap Offer Rate (SOR), and one action concerning the Canadian Dealer Offered Rate (CDOR).

We cannot predict the effect on us of the interbank and dealer offered rates matters, which could include fines levied by government bodies, damages from private litigation for which we may be liable, legal and regulatory sanctions (including possible criminal sanctions) and other consequences.

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Regulators and law enforcement authorities are investigating, among other things, our compliance with the US Foreign Corrupt Practices Act and other laws with respect to our hiring practices related to candidates referred by clients, potential clients and government officials, and our engagement of finders and consultants.

Certain regulators and law enforcement authorities in various jurisdictions, including the SEC and the DOJ, are investigating, among other things, our compliance with the US Foreign Corrupt Practices Act and other laws with respect to our hiring practices related to candidates referred by clients, potential clients and government officials, and our engagement of finders and consultants. We are responding to and continuing to cooperate with these investigations. Certain regulators in other jurisdictions have also been briefed on these investigations. In the event that any violations of law or regulation are found to have occurred or are alleged to have occurred, and an enforcement action is filed, legal and regulatory sanctions in respect thereof may materially and adversely affect our results of operations, financial condition and reputation.

We are currently involved in civil proceedings in connection with our voluntary takeover offer for the acquisition of all shares of Postbank. The extent of our financial exposure to this matter could be material, and our reputation may be harmed.

On September 12, 2010, we announced the decision to make a voluntary takeover offer for the acquisition of all shares in Deutsche Postbank AG (Postbank). On October 7, 2010, we published the official offer document. In our takeover offer, we offered Postbank shareholders consideration of € 25 for each Postbank share. The takeover offer was accepted for a total of approximately 48.2 million Postbank shares.

In November 2010, a former shareholder of Postbank, Effecten-Spiegel AG, which had accepted the takeover offer, brought a claim against us alleging that the offer price was too low and was not determined in accordance with the applicable law of the Federal Republic of Germany. The plaintiff alleges that we had been obliged to make a mandatory takeover offer for all shares in Postbank, at the latest, in 2009. The plaintiff avers that, at the latest in 2009, the voting rights of Deutsche Post AG in Postbank had to be attributed to us pursuant to Section 30 of the German Takeover Act. Based thereon, the plaintiff alleges that the consideration offered by us for the shares in Postbank in the 2010 voluntary takeover offer needed to be raised to € 57.25 per share.

The Regional Court Cologne (Landgericht) dismissed the claim in 2011 and the Cologne appellate court dismissed the appeal in 2012. The Federal Court set aside the Cologne appellate court's judgment and referred the case back to the appellate court. In its judgment, the Federal Court stated that the appellate court had not sufficiently considered the plaintiff's allegation that we and Deutsche Post AG "acted in concert" in 2009.

Starting in 2014, additional former shareholders of Postbank, who accepted the 2010 tender offer, brought similar claims as Effecten-Spiegel AG against us which are pending with the Regional Court Cologne and the Higher Regional Court of Cologne, respectively. On October 20, 2017, the Regional Court Cologne handed down a decision granting the claims in a total of 14 cases which were combined in one proceeding. The Regional Court Cologne took the view that we were obliged to make a mandatory takeover offer already in 2008 so that the appropriate consideration to be offered in the takeover offer should have been € 57.25 per share. Taking the consideration paid into account, the additional consideration per share owed to shareholders which have accepted the takeover offer would thus amount to € 32.25. We appealed this decision and the appeal has been assigned to the 13th Senate of the Higher

Regional Court of Cologne, which also is hearing the appeal of Effecten-Spiegel AG.

On November 8, 2017, a hearing took place before the Higher Regional Court of Cologne in the Effecten-Spiegel case. In that hearing, the Higher Regional Court indicated that it disagreed with the conclusions of the Regional Court Cologne and took the preliminary view that we were not obliged to make a mandatory takeover offer in 2008 or 2009. Initially the Higher Regional Court resolved to announce a decision on December 13, 2017. However, this was postponed to February 2018 because the plaintiff challenged the three members of the 13th Senate of the Higher Regional Court of Cologne for alleged prejudice. The challenge was rejected by the Higher Regional Court of Cologne at the end of January 2018. In February 2018, the court granted a motion by Effecten-Spiegel AG to re-open the hearing.

The Higher Regional Court informed the parties by notice dated February 19, 2019 that it has doubts that an acting in concert can be based on the contractual clauses which the Regional Court Cologne found to be sufficient to assume an acting in concert (and to grant the plaintiffs' claims in October 2017). Against this background, the Higher Regional Court resolved to take further evidence and to call a number of witnesses in both cases who shall be heard from October 30, 2019 until at least December 11, 2019 in weekly hearings. The individuals to be heard include current and former board members of Deutsche Bank, Deutsche Post AG and Postbank as well as other persons involved in the Postbank transaction. The court further informed the parties that it is considering to request from us the production of relevant transaction documents.

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We have been served with a large number of additional lawsuits filed against us shortly before the end of 2017, almost all of which are now pending with the Regional Court Cologne. Some of the new plaintiffs allege that the consideration offered by us for the shares in Postbank in the 2010 voluntary takeover should be raised to € 64.25 per share.

The claims for payment against us in relation to these matters total almost € 700 million (excluding interest).

In September 2015, former shareholders of Postbank filed in the Regional Court Cologne shareholder actions against Postbank to set aside the squeeze-out resolution taken in the shareholders meeting of Postbank in August 2015. Among other things, the plaintiffs allege that we were subject to a suspension of voting rights with respect to its shares in Postbank based on the allegation that we failed to make a mandatory takeover offer at a higher price in 2009. The squeeze out is final and the proceeding itself has no reversal effect, but may result in damage payments. The claimants in this proceeding refer to legal arguments similar to those asserted in the Effecten-Spiegel proceeding described above. In a decision on October 20, 2017, the Regional Court Cologne declared the squeeze-out resolution to be void. The court, however, did not rely on a suspension of voting rights due to an alleged failure by us to make a mandatory takeover offer, but argued that Postbank violated information rights of Postbank shareholders in Postbank's shareholders meeting in August 2015. Postbank has appealed this decision.

The legal question of whether we had been obliged to make a mandatory takeover offer for all Postbank shares prior to its 2010 voluntary takeover may also impact two pending appraisal proceedings (Spruchverfahren). These proceedings were initiated by former Postbank shareholders with the aim to increase the cash compensation offered in connection with the squeeze-out of Postbank shareholders in 2015 and the cash compensation offered and annual guaranteed dividend paid in connection with the execution of a domination and profit and loss transfer agreement (Beherrschungs- und Gewinnabführungsvertrag) between DB Finanz-Holding AG (now DB Beteiligungs-Holding GmbH) and Postbank in 2012. The Regional Court Cologne issued resolutions indicating that it is inclined to consider a potential obligation of Deutsche Bank to make a mandatory takeover offer for Postbank at an offer price of € 57.25 when determining the adequate cash compensation in the appraisal proceedings. The cash compensation paid in

connection with the domination and profit and loss transfer agreement was € 25.18 and was accepted for approximately 0.5 million shares. The squeeze-out compensation paid in 2015 was € 35.05 and approximately 7 million shares were squeezed-out.

The extent of our financial exposure to this matter could be material, and our reputation may be harmed.

We have investigated the circumstances around equity trades entered into by certain clients in Moscow and London and have advised regulators and law enforcement authorities in several jurisdictions about those trades. In the event that violations of law or regulation are found to have occurred, any resulting penalties against us may materially and adversely affect our results of operations, financial condition and reputation.

We have investigated the circumstances around equity trades entered into by certain clients with us in Moscow and London that offset one another. The total volume of transactions reviewed is significant. Our internal investigation of potential violations of law, regulation and policy and into the related internal control environment has concluded, and we have assessed the findings identified during the investigation; to date we have identified certain violations of our policies and deficiencies in our control environment. We have advised regulators and law enforcement authorities in several jurisdictions (including Germany, Russia, the UK and the United States) of this investigation and have taken disciplinary measures with regards to certain individuals in this matter.

On January 30 and 31, 2017, the DFS and FCA announced settlements with the Bank related to their investigations into this matter. The settlements conclude the DFS and the FCA's investigations into the bank's AML control function in its investment banking division, including in relation to the equity trading described above. Under the terms of the settlement agreement with the DFS, Deutsche Bank entered into a consent order, and agreed to pay civil monetary penalties of US\$ 425 million and to engage an independent monitor to conduct a comprehensive review of its existing AML compliance programs that pertain to or affect activities conducted by or through our US bank subsidiary DBTCA and our New York branch for a term of up to two years. Under the terms of the settlement agreement with the FCA, we agreed to pay civil monetary penalties of approximately GBP 163 million. On May 30, 2017, the Federal Reserve announced its settlement with us resolving this matter as well as additional AML issues identified by the Federal Reserve. We paid a penalty of US\$ 41 million. We also agreed to retain independent third parties to assess our Bank Secrecy Act/AML program and review certain foreign correspondent banking activity of DBTCA. We are also required to submit written remediation plans and programs.

We continue to cooperate with regulators and law enforcement authorities, including the DOJ which has its own ongoing investigation into these securities trades. In the event that violations of law or regulation are found to have occurred, legal and regulatory sanctions in respect thereof may materially and adversely affect our results of operations, financial condition and reputation.

We are currently involved in civil and criminal proceedings in connection with transactions with Monte dei Paschi di Siena. The extent of our financial exposure to these matters could be material, and our reputation may be harmed.

In March 2013, Banca Monte dei Paschi di Siena ("MPS") initiated civil proceedings in Italy against us alleging that we assisted former MPS senior management in an accounting fraud on MPS, by undertaking repo transactions with MPS and "Santorini", a wholly owned special-purpose vehicle of MPS, which helped MPS defer losses on a previous transaction undertaken with us. Subsequently, in July 2013, the Fondazione Monte dei Paschi di Siena ("FMPS"), MPS' largest shareholder, also commenced civil proceedings in Italy for damages based on substantially the same facts. In December 2013, we reached an agreement with MPS to settle the civil proceedings and the transactions were unwound. The civil proceedings initiated by FMPS, in which damages of between € 220 million and € 381 million were

claimed, were also recently settled upon payment by us of € 17.5 million. FMPS's separate claim filed in July 2014 against FMPS's former administrators and a syndicate of 12 banks including DB S.p.A. for € 286 million continues to be pending before the first instance Florence courts.

A criminal investigation was launched by the Siena Public Prosecutor into the transactions entered into by MPS with us and certain unrelated transactions entered into by MPS with other parties. Such investigation was moved in summer 2014 from Siena to the Milan Public Prosecutors as a result of a change in the alleged charges being investigated. On February 16, 2016, the Milan Public Prosecutors issued a request of committal to trial against us and six current and former employees. The committal process concluded with a hearing on October 1, 2016, during which the Milan court committed all defendants in the criminal proceedings to trial. Our potential exposure is for administrative liability under Italian Legislative Decree n. 231/2001 and for civil vicarious liability as an employer of current and former employees who are being criminally prosecuted. A verdict is not expected before summer 2019.

On May 22, 2018, CONSOB, the authority responsible for regulating the Italian financial markets, issued fines of € 100,000 each against the six current and former employees of ours who are individual defendants in the criminal proceedings. The six individuals were also banned from performing management functions in Italy and for Italian based institutions for three to six months each. No separate fine or sanction was imposed on us but we are jointly and severally liable for our six current/former employees' fines. On June 14, 2018, we and the six individuals filed an appeal in the Milan Court of Appeal challenging CONSOB's decision and one of the individuals sought a stay of enforcement of the fine against that individual. The stay was granted on July 21, 2018. The hearing of the appeal is scheduled for June 5, 2019 with a verdict expected by the end of 2019.

The extent of our financial exposure to these matters could be material, and our reputation may suffer material harm as a result of these matters.

We are under continuous examination by tax authorities in the jurisdictions in which we operate. Tax laws are increasingly complex and are evolving. The cost to us arising from the conclusion and resolution of routine tax examinations, tax litigation and other forms of tax proceedings or tax disputes may increase and may adversely affect our business, financial condition and results of operation.

We are under continuous examination by tax authorities in the jurisdictions in which we operate. Tax laws are increasingly complex. In the current political and regulatory environment, tax administrations' and courts' interpretation of tax laws and regulations and their application are evolving, and scrutiny by tax authorities has become increasingly intense. On December 22, 2017, the new US tax legislation, known as the "Tax Cuts and Jobs Act" or "TCJA", was signed into law. The TCJA includes a number of provisions, such as the Base Erosion Anti-Abuse Tax, for which proposed regulations were issued on December 13, 2018. While providing a certain level of clarity, the proposed regulations are subject to further changes before being made final, and certain issues will require further interpretative guidance over the coming months and years. In addition, wide ranging changes in the principles of international taxation emanating from the OECD's Base Erosion and Profit Shifting agenda are generating significant uncertainties for us and our subsidiaries and may result in an increase in instances of bilateral tax disputes going forward, as member states may take different approaches in transposing these requirements into national law. Tax administrations have also been focusing on the eligibility of taxpayers for reduced withholding taxes on dividends in connection with certain cross-border lending or derivative transactions with the German Federal Ministry of Finance having issued administrative guidance in this area in 2017. As a result, the cost to us arising from the conclusion and resolution of routine tax examinations, tax litigation and other forms of tax proceedings or tax disputes, as well as from rapidly changing and increasingly complex and uncertain tax laws and principles, may increase and may adversely affect our business, financial condition and results of operation.

We are currently involved in a legal dispute with the German tax authorities in relation to the tax treatment of certain income received with respect to our pension plan assets. The proceeding is pending in front of the German supreme fiscal court (Bundesfinanzhof). Should the courts ultimately rule in favor of the German tax authorities, the outcome could have a material effect on our comprehensive income and financial condition.

We sponsor a number of post-employment benefit plans on behalf of our employees. In Germany, the pension assets that fund the obligations under these pension plans are held by Benefit Trust GmbH. The German tax authorities are challenging the tax treatment of certain income received by Benefit Trust GmbH in the years 2010 to 2013 with respect to its pension plan assets. For the year 2010 Benefit Trust GmbH paid the amount of tax and interest assessed of € 160 million to the tax authorities and is seeking a refund of the amounts paid in litigation with the relevant lower fiscal court. For 2011 to 2013 the matter is stayed pending the outcome of the 2010 tax litigation. The amount of tax and interest under dispute for years 2011 to 2013, which also has been paid to the tax authorities, amounts to € 456 million. In March 2017, the lower fiscal court ruled in favor of Benefit Trust GmbH and in September 2017 the tax authorities appealed the decision to the German supreme fiscal court (Bundesfinanzhof). A decision by the supreme fiscal court is not expected for a number of years. An ultimate decision by the courts that is unfavorable to us could materially and adversely affect our comprehensive income and financial condition.

US Congressional committees and other US governmental entities have sought and may seek information from us concerning potential dealings between us and the US executive branch, the President, his family and other close associates, exposing us in particular to risk to our reputation and potential loss of business as a result of extensive media attention.

A number of media entities have reported that US Congressional committees and other US governmental entities are seeking or may seek information from us concerning, among other things, potential dealings between the Bank and certain members of the Executive branch of the US government, the President, his family, and other close associates. Attention surrounding such actual or potential requests and inquiries and our responses can create reputational and other risks that could have a material adverse effect on us. Our policy is to cooperate with all authorized government inquiries.

We have received requests for information from regulatory and law enforcement agencies concerning our correspondent banking relationship with Danske Bank, exposing us in particular to risk to our reputation and potential loss of business as a result of extensive media attention.

We have received requests for information from regulatory and law enforcement agencies concerning our correspondent banking relationship with Danske Bank, including our historical processing of correspondent banking transactions on behalf of customers of Danske Bank's Estonia branch prior to cessation of the correspondent banking relationship with that branch in 2015. We are providing information to and otherwise cooperating with the investigating agencies. We are also conducting an internal investigation into these matters, including of whether any violations of law, regulation or policy occurred and the effectiveness of the related internal control environment. Media and market attention surrounding these requests can create reputational risks in particular, even if our investigations and those of our regulators and the authorities do not result in evidence of wrongdoing. We could in particular suffer diminished volumes of business as a result, which could have a material adverse effect on our financial condition and results of operations.

In November 2018, our offices in Frankfurt were searched by German law enforcement authorities on the suspicion that two employees and as-yet unidentified further individuals deliberately abstained from issuing suspicious activity reports (SARs) in a timely manner and aided and abetted money laundering, exposing us in particular to risk to our reputation and potential loss of business as a result of extensive media attention.

On November 29, 2018, based on a search warrant issued by the Local Court (Amtsgericht) in Frankfurt, our offices in Frankfurt were searched by German law enforcement authorities on the suspicion that two employees and as-yet

unidentified further individuals deliberately abstained from issuing suspicious activity reports (SARs) in a timely manner and aided and abetted money laundering in connection with our offshore trust business. The physical searches ended on November 30, 2018. Nevertheless, the search remains formally open until we have completed additional data deliveries. We are cooperating in the investigation, as has been publicly acknowledged by the Frankfurt Public Prosecutor's Office. Attention surrounding such search and investigation can create reputational risks in particular, even if our investigations and those of our regulators and the authorities do not result in evidence of wrongdoing. We could in particular suffer diminished volumes of business as a result, which could have a material adverse effect on our financial condition and results of operations.

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Guilty pleas by or convictions of us or our affiliates in criminal proceedings may have consequences that have adverse effects on certain of our businesses.

We and our affiliates have been and are subjects of criminal proceedings or investigations. In particular, as part of the resolution of the investigation of the DOJ into misconduct relating to London interbank offered rates, our subsidiary DB Group Services (UK) Limited entered into a plea agreement with the DOJ, pursuant to which the company pled guilty to one count of wire fraud, and, subsequently, a judgment of conviction was issued against the company. Also, in connection with the KOSPI Index unwind matters, our subsidiary Deutsche Securities Korea Co. was convicted of vicarious corporate criminal liability in respect of spot/futures linked market manipulation by one of its employees; though the criminal trial verdict has been overturned on appeal, the Korean prosecutor's office has appealed the decision. We and our subsidiaries are also subjects of other criminal proceedings or investigations.

Guilty pleas or convictions against us or our affiliates could lead to our ineligibility to use an important trading exemption under ERISA. In particular, such guilty pleas or convictions could cause our asset management affiliates to no longer qualify as "qualified professional asset managers" ("QPAMs") under the QPAM Prohibited Transaction Exemption, which exemption is relied on to provide asset management services to certain pension plans in connection with certain asset management strategies. While there are a number of statutory exemptions and numerous other administrative exemptions that our asset management affiliates may use to trade on behalf of ERISA plans, and in many instances they may do so in lieu of relying on the QPAM exemption, loss of QPAM status could cause customers who rely on such status (whether because they are legally required to do so or because we have agreed contractually with them to maintain such status) to cease to do business or refrain from doing business with us and could negatively impact our reputation more generally. For example, clients may mistakenly see the loss as a signal that our asset management affiliates are somehow no longer approved as asset managers generally by the US Department of Labor ("DOL"), the agency responsible for ERISA, and cease to do business or refrain from doing business with us for that reason. This could have a material adverse effect on our results of operations, particularly those of our asset management business in the United States. On December 29, 2017, the DOL published an individual exemption permitting certain of our affiliates to retain their QPAM status despite both the conviction of DB Group Services (UK) Limited and the conviction of Deutsche Securities Korea Co. The exemption applies through April 17, 2021 but may terminate earlier if, among other things, we or our affiliates are convicted of crimes in other matters. The disqualification period arising from these convictions extends until April 17, 2027, so we will need to obtain a further exemption by April 18, 2021 to avoid a loss of QPAM status at that time, with the potential for the adverse effects described above if such further exemption is not granted.

Other Risks

In addition to our traditional banking businesses of deposit-taking and lending, we also engage in nontraditional credit businesses in which credit is extended in transactions that include, for example, our holding of securities of third parties or our engaging in complex derivative transactions. These nontraditional credit businesses materially increase

our exposure to credit risk.

As a bank and provider of financial services, we are exposed to the risk that third parties who owe us money, securities or other assets will not perform their obligations. Many of the businesses we engage in beyond the traditional banking businesses of deposit-taking and lending also expose us to credit risk.

In particular, much of the business we conduct through our Corporate & Investment Bank corporate division entails credit transactions, frequently ancillary to other transactions. Nontraditional sources of credit risk can arise, for example, from holding securities of third parties; entering into swap or other derivative contracts under which counterparties have obligations to make payments to us; executing securities, futures, currency or commodity trades that fail to settle at the required time due to nondelivery by the counterparty or systems failure by clearing agents, exchanges, clearing houses or other financial intermediaries; and extending credit through other arrangements. Parties to these transactions, such as trading counterparties, may default on their obligations to us due to bankruptcy, political and economic events, lack of liquidity, operational failure or other reasons.

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Many of our derivative transactions are individually negotiated and non-standardized, which can make exiting, transferring or settling the position difficult. Certain credit derivatives require that we deliver to the counterparty the underlying security, loan or other obligation in order to receive payment. In a number of cases, we do not hold, and may not be able to obtain, the underlying security, loan or other obligation. This could cause us to forfeit the payments otherwise due to us or result in settlement delays, which could damage our reputation and ability to transact future business, as well as impose increased costs on us. Legislation in the European Union (EMIR) and the United States (the Dodd-Frank Act) has introduced requirements for the standardization, margining, central clearing and transaction reporting of certain over-the-counter derivatives. While such requirements are aimed at reducing the risk posed to counterparties and the financial system by such derivatives, they may reduce the volume and profitability of the transactions in which we engage, and compliance with such provisions may impose substantial costs on us.

The exceptionally difficult market conditions experienced during the global financial crisis severely adversely affected certain areas in which we do business that entail nontraditional credit risks, including the leveraged finance and structured credit markets, and similar market conditions, should they occur, may do so in the future.

A substantial proportion of our assets and liabilities comprise financial instruments that we carry at fair value, with changes in fair value recognized in our income statement. As a result of such changes, we have incurred losses in the past, and may incur further losses in the future.

A substantial proportion of the assets and liabilities on our balance sheet comprise financial instruments that we carry at fair value, with changes in fair value recognized in the income statement. Fair value is defined as the price at which an asset or liability could be exchanged in an arm's length transaction between knowledgeable, willing parties, other than in a forced or liquidation sale. If the value of an asset carried at fair value declines (or the value of a liability carried at fair value increases) a corresponding unfavorable change in fair value is recognized in the income statement. These changes have been and could in the future be significant.

Observable prices or inputs are not available for certain classes of financial instruments. Fair value is determined in these cases using valuation techniques we believe to be appropriate for the particular instrument. The application of valuation techniques to determine fair value involves estimation and management judgment, the extent of which will vary with the degree of complexity of the instrument and liquidity in the market. Management judgment is required in the selection and application of the appropriate parameters, assumptions and modeling techniques. If any of the assumptions change due to negative market conditions or for other reasons, subsequent valuations may result in

significant changes in the fair values of our financial instruments, requiring us to record losses.

Our exposure and related changes in fair value are reported net of any fair value gains we may record in connection with hedging transactions related to the underlying assets. However, we may never realize these gains, and the fair value of the hedges may change in future periods for a number of reasons, including as a result of deterioration in the credit of our hedging counterparties. Such declines may be independent of the fair values of the underlying hedged assets or liabilities and may result in future losses.

Pursuant to accounting rules, we must periodically test the value of the goodwill of our businesses and the value of our other intangible assets for impairment. In the event such test determines that criteria for impairment exists, we are required under accounting rules to write down the value of such asset. Impairments of goodwill and other intangible assets have had and may have a material adverse effect on our profitability results of operations.

Goodwill arises on the acquisition of subsidiaries and associates and represents the excess of the aggregate of the cost of an acquisition and any noncontrolling interests in the acquiree over the fair value of the identifiable net assets acquired at the date of the acquisition. Goodwill on the acquisition of subsidiaries is capitalized and reviewed for impairment annually or more frequently if there are indications that impairment may have occurred. Intangible assets are recognized separately from goodwill when they are separable or arise from contractual or other legal rights and their fair value can be measured reliably. These assets are tested for impairment and their useful lives reaffirmed at least annually. The determination of the recoverable amount in the impairment assessment of non-financial assets requires estimates based on quoted market prices, prices of comparable businesses, present value or other valuation techniques, or a combination thereof, necessitating management to make subjective judgments and assumptions. These estimates and assumptions could result in significant differences to the amounts reported if underlying circumstances were to change.

Impairments of goodwill and other intangible assets have had and may have a material adverse effect on our profitability and results of operations. In 2016, changes in goodwill included impairments of € 285 million in Sales & Trading and of € 500 million in Asset Management. The impairment in Sales & Trading was the result of a transfer of certain businesses from Asset Management to Sales & Trading. The goodwill impairment in Asset Management was recorded in relation to the sale of the Abbey Life business and the formation of a disposal group held for sale.

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Pursuant to accounting rules, we must review our deferred tax assets at the end of each reporting period. To the extent that it is no longer probable that sufficient taxable income will be available to allow the benefit of part or all of deferred tax assets to be utilized, we have to reduce the carrying amounts. These reductions have had and may in the future have material adverse effects on our profitability, equity and financial condition.

We recognize deferred tax assets for future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, unused tax losses and unused tax credits. Deferred tax assets are recognized only to the extent that it is probable that sufficient taxable profit will be available against which those unused tax losses, unused tax credits and deductible temporary differences can be utilized. As of December 31, 2018 and December 31, 2017, we recognized deferred tax assets of € 6.5 billion and € 5.9 billion, respectively in entities which have suffered a loss in either the current or preceding period.

In determining the amount of deferred tax assets, we use historical tax capacity and profitability information and, if relevant, forecasted operating results based upon approved business plans, including a review of the eligible carry-forward periods, available tax planning opportunities and other relevant considerations. Each quarter, we re-evaluate our estimate related to deferred tax assets, including our assumptions about future profitability. The accounting estimate related to the deferred tax assets depends upon underlying assumptions that can change from period to period and requires significant management judgment. For example tax law changes or variances in future

projected operating performance could result in an adjustment to the deferred tax assets that would be charged to income tax expense or directly to equity in the period such determination was made.

These adjustments have had and may in the future have material adverse effects on our profitability or equity. In 2017, we recognized a one-time tax charge of € 1.4 billion attributable to the remeasurement of US deferred tax assets as a result of the US tax reform.

Our risk management policies, procedures and methods leave us exposed to unidentified or unanticipated risks, which could lead to material losses.

We have devoted significant resources to developing our risk management policies, procedures and assessment methods and intend to continue to do so in the future. Nonetheless, the risk management techniques and strategies have not been and may in the future not be fully effective in mitigating our risk exposure in all economic market environments or against all types of risk, including risks that we fail to identify or anticipate. Some of our quantitative tools and metrics for managing risk are based upon our use of observed historical market behavior. We apply statistical and other tools to these observations to arrive at quantifications of our risk exposures. During the financial crisis, the financial markets experienced unprecedented levels of volatility (rapid changes in price direction) and the breakdown of historically observed correlations (the extent to which prices move in tandem) across asset classes, compounded by extremely limited liquidity. In this volatile market environment, our risk management tools and metrics failed to predict some of the losses we have experienced, and they may in the future fail to predict important risk exposures. In addition, our quantitative modeling does not take all risks into account and makes numerous assumptions regarding the overall environment, which may not be borne out by events. As a result, risk exposures have arisen and could continue to arise from factors we did not anticipate or correctly evaluate in our statistical models. This has limited and could continue to limit our ability to manage our risks especially in light of geopolitical developments, many of the outcomes of which are currently unforeseeable. Our losses thus have been and may in the future be significantly greater than the historical measures indicate.

In addition, our more qualitative approach to managing those risks not taken into account by our quantitative methods could also prove insufficient, exposing us to material unanticipated losses. Also, if existing or potential customers or counterparties believe our risk management is inadequate, they could take their business elsewhere or seek to limit their transactions with us. This could harm our reputation as well as our revenues and profits. See “Management Report: Risk Report” in the Annual Report 2018 for a more detailed discussion of the policies, procedures and methods we use to identify, monitor and manage our risks.

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Operational risks, which may arise from errors in the performance of our processes, the conduct of our employees, instability, malfunction or outage of our IT system and infrastructure, or loss of business continuity, or comparable issues with respect to our vendors, may disrupt our businesses and lead to material losses.

We face operational risk arising from errors, inadvertent or intentional, made in the execution, confirmation or settlement of transactions or from transactions not being properly recorded, evaluated or accounted for. An example of this risk concerns our derivative contracts, which are not always confirmed with the counterparties on a timely basis. For so long as the transaction remains unconfirmed, we are subject to heightened credit and operational risk and in the event of a default may find it more difficult to enforce the contract.

In addition, our businesses are highly dependent on our ability to process manually or through our systems a large number of transactions on a daily basis, across numerous and diverse markets in many currencies. Some of the transactions have become increasingly complex. Moreover, management relies heavily on its financial, accounting

and other data processing systems that include manual processing components. If any of these processes or systems do not operate properly, or are disabled, or subject to intentional or inadvertent human error, we could suffer financial loss, a disruption of our businesses, liability to clients, regulatory intervention or reputational damage.

We are also dependent on our employees to conduct our business in accordance with applicable laws, regulations and generally accepted business standards. If our employees do not conduct our business in this manner, we may be exposed to material losses. Furthermore, if an employee's misconduct reflects fraudulent intent, we could also be exposed to reputational damage. We categorize these risks as conduct risk, which comprises inappropriate business practices, including selling products that are not suitable for a particular customer, fraud, unauthorized trading and failure to comply with applicable regulations, laws and internal policies.

We in particular face the risk of loss events due to the instability, malfunction or outage of our IT system and IT infrastructure. Such losses could materially affect our ability to perform business processes and may, for example, arise from the erroneous or delayed execution of processes as either a result of system outages or degraded services in systems and IT applications. A delay in processing a transaction, for example, could result in an operational loss if market conditions worsen during the period after the error. IT-related errors may also result in the mishandling of confidential information, damage to our computer systems, financial losses, additional costs for repairing systems, reputational damage, customer dissatisfaction or potential regulatory or litigation exposure.

Business continuity risk is the risk of incurring losses resulting from the interruption of normal business activities. We operate in many geographic locations and are frequently subject to the occurrence of events outside of our control. Despite the contingency plans we have in place, our ability to conduct business in any of these locations may be adversely impacted by a disruption to the infrastructure that supports our business, whether as a result of, for example, events that affect our third party vendors or the community or public infrastructure in which we operate. Any number of events could cause such a disruption including deliberate acts such as sabotage, terrorist activities, bomb threats, strikes, riots and assaults on the bank's staff; natural calamities such as hurricanes, snow storms, floods, disease pandemic and earthquakes; or other unforeseen incidents such as accidents, fires, explosions, utility outages and political unrest. Any such disruption could have a material adverse effect on our business and financial position.

We utilize a variety of vendors in support of our business and operations. Services provided by vendors pose risks to us comparable to those we bear when we perform the services ourselves, and we remain ultimately responsible for the services our vendors provide. Furthermore, if a vendor does not conduct business in accordance with applicable standards or our expectations, we could be exposed to material losses or regulatory action or litigation or fail to achieve the benefits we sought from the relationship.

We utilize a variety of vendors in support of our business and operations. We do so in order to focus on our core competencies and to seek improvements in costs, efficiency and effectiveness in our operations, for instance in connection with our IT modernization efforts. Services provided by vendors pose risks to us comparable to those we bear when we perform the services ourselves, and we remain ultimately responsible for the services our vendors provide. We depend on our vendors to conduct their delivery of services in compliance with applicable laws, regulations and generally accepted business standards and in accordance with the contractual terms and service levels they have agreed with us. If our vendors do not conduct business in accordance with these standards, we may be exposed to material losses and could be subject to regulatory action or litigation as well as be exposed to reputational damage. More generally, if a vendor relationship does not meet our expectations, we could be exposed to financial risks, such as the costs and expenses associated with migration of the services to another vendor and business and operational risks related to the transition, and we could fail to achieve the benefits we sought from the relationship.

Our operational systems are subject to an increasing risk of cyber-attacks and other internet crime, which could result in material losses of client or customer information, damage our reputation and lead to regulatory penalties and financial losses.

Among the operational risks we face is the risk of breaches of the security of our or our vendors' computer systems due to unauthorized access to networks or resources, the introduction of computer viruses or malware, or other forms of cybersecurity attacks or incidents. Such breaches could threaten the confidentiality of our or our clients' data and the integrity of our systems. We devote significant resources toward the protection of our computer systems against such breaches and toward ensuring that our vendors employ appropriate cybersecurity safeguards. To address the evolving cyber threat risk, we have expended significant resources to modify and enhance our protective measures and to investigate and remediate any information security vulnerabilities. These measures, however, may not be effective against the many security threats we face.

The increasing frequency and sophistication of recent cyber-attacks has resulted in an elevated risk profile for many organizations around the world, and significant attention by our management has been paid to the overall level of preparedness against such attacks. Cybersecurity is growing in importance due to factors such as the continued and increasing reliance on our technology environment. We and other financial institutions have experienced attacks on computer systems, including attacks aimed at obtaining unauthorized access to confidential company or customer information or damaging or interfering with company data, resources or business activities, or otherwise exploiting vulnerabilities in our infrastructure. We expect to continue to be the target of such attacks in the future. Although we have to date not experienced any material business impact from these attacks, we may not be able to effectively anticipate and prevent more material attacks from occurring in the future. A successful attack could have a significant negative impact on us, including as a result of disclosure or misappropriation of client or proprietary information, damage to computer systems, financial losses, remediation costs (such as for investigation and re-establishing services), increased cybersecurity costs (such as for additional personnel, technology, or third-party vendors), reputational damage, customer dissatisfaction and potential regulatory or litigation exposure.

The size of our clearing operations exposes us to a heightened risk of material losses should these operations fail to function properly.

We have large clearing and settlement businesses and an increasingly complex and interconnected information technology (IT) landscape. These give rise to the risk that we, our customers or other third parties could lose substantial sums if our systems fail to operate properly for even short periods. This will be the case even where the reason for the interruption is external to us. In such a case, we might suffer harm to our reputation even if no material amounts of money are lost. This could cause customers to take their business elsewhere, which could materially harm our revenues and profits.

Ongoing global benchmark reform efforts initiated by the FSB, specifically the transition from interbank offered rates to alternative reference rates, including so-called "risk-free-rates", that are under development, introduce a number of inherent risks to our business and the financial industry. These risks, should they materialize, may have adverse effects on our business, results of operations and profitability.

Regulators and central banks have set the goal of improving the robustness of financial benchmarks, especially interest rate benchmarks. As a result of this initiative, the ongoing availability of, among other benchmarks, the London Interbank Offered Rate ("LIBOR"), the Euro Interbank Offered Rate ("EURIBOR") and the Euro Overnight Index Average rate ("EONIA" and, together with LIBOR, EURIBOR and other interbank benchmark rates, "IBORs") is uncertain. In the UK, the FCA has announced that it will no longer compel panel banks to submit rates for the calculation of LIBOR after 2021. As a result, LIBOR may be modified or discontinued after 2021. EURIBOR reform to comply with the EU financial benchmarks regulation is underway, but there is a risk that the process will not be completed by the end of the transition period in the regulation, which leaves EURIBOR's future availability in doubt. Additionally, the administrator of EONIA expects the rate to be unavailable for use in the EU after the end of the

transition period. The transition period currently ends at the end of 2019, but an extension of the transition period for critical and third country benchmarks, which would allow these rates to remain available through 2021, has been agreed by EU policymakers in February 2019 and is expected to be enacted into law in the coming months.

We and other market participants are actively engaged in industry working groups to identify and recommend alternative “risk-free-rates” (“RFRs”) and processes through which parties can transition to such rates, and a number of sub-working groups have been set up to address open questions and issues surrounding these changes.

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In addition, there are ongoing initiatives of benchmark administrators and their respective regulators to revise existing benchmark methodologies with the aim of improving the robustness of such benchmarks. As a contributing bank to a range of interest rate benchmarks, including LIBOR and EURIBOR, we are closely involved with such initiatives.

A material portion of our assets and liabilities, including financial instruments we trade and other transactions and services we are involved in, have interest rates that are linked to IBORs that may be subject to potential discontinuation, requiring us to prepare for such discontinuation and for a potential transition to RFRs. The discontinuation of these IBORs and the transition to RFRs pose a variety of risks to us, including the following:

- Legal and compliance risk (including conduct risk) may arise due to possible disputes regarding disclosures to clients or provisions in financial contracts with counterparties. Many financial instruments linked to IBORs contain provisions for the use of a successor interest rate in the event of the discontinuation of such IBORs, while others do not. In connection with such a discontinuation and transition, the counterparty to the financial instrument may challenge the rate determined for such instrument, particularly if we are the obligor under such financial instrument or are otherwise involved in the determination or setting of the successor rate, whether in respect of the particular financial instrument or in respect of the applicable benchmarks generally. Such disputes could result in claims of market abuse and mistreatment of customers, litigation or regulatory action.
- Liquidity risk may arise due to slow acceptance, take-up, and development of liquidity in RFR-related products, leading to market dislocation or fragmentation. Additionally, bid/offer spreads may widen impacting funding and collateral postings. Also, replacement of IBORs with a new benchmark rate could adversely impact the value of and return on existing instruments and contracts and the market for securities and other instruments whose returns are linked to IBOR benchmarks.
- Market risk may arise due to interest rate “basis” risks – the risks posed by different interest rate provisions applying to assets than to liabilities – across tenors and currencies, driven by differing fallback methodologies and timings. Different timings of adoption of fallback protocols will create new basis and potentially make hedging more costly or less effective, and losses may result from value transfer in the fallback methodology adopted. In the event of discontinuation of IBORs and a transition to a successor interest rate, we may incur losses in respect of our assets and liabilities linked to IBORs if the successor interest rate is not economically equivalent to the discontinued IBORs.
- Introduction of new RFRs will require us to develop new pricing and risk models related to new RFR-linked products. The models we develop may require approval by competent regulators if they differ significantly from existing models, which may introduce delays.
- Finance and tax risk may arise due to the discontinuation of IBORs and transition to RFRs, which could cause hedge accounting items to be derecognized, adversely impacting our profitability or causing us to incur losses. Discontinuation and transition could also pose difficulties for the independent price verification of financial instruments, where market data is unavailable for the new or modified financial instrument. Tax uncertainties could arise if a discontinuation or transition is viewed as a significant modification of a financial instrument that results in a profit or loss recognition event for tax purposes.

- Technology and operational risk may arise as a result of the complexity of transition processes, which will require collaboration with our regulators and central banks as well as a wide range of market participants. Also, significant change efforts – relating to RFR product development, re-documentation of client contracts and infrastructure change, including to systems, processes and models across the business and our Finance, Risk and Treasury functions –, will be required. Successful transition processes are, to some extent, dependent on achieving industry and client consensus on standards and conventions, timing and sequencing of transition steps, creation of term versions of the RFRs and the timely re-documenting of client contracts.

Initiatives to reform existing benchmarks and our participation in them potentially give risk to similar legal and other risks.

The necessity and potential timing of the discontinuation of IBORs, the prospects for transition to RFRs in the various markets in which they would be required, and industry, market and regulatory response, remain highly uncertain. Also, as mentioned, there are external factors, such as required actions of regulators or counterparties, which create risks that an individual institution, or the industry as a whole, would find difficult to address. Depending how such contingencies develop, and the adequacy of the response of the industry, the market, regulators and us to them, the discontinuation of IBORs and transition to RFRs could have adverse effects on our business, results of operations and profitability.

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We are subject to laws and other requirements relating to financial and trade sanctions and embargoes. If we breach such laws and requirements, we can be subject, and have in the past been subject, to material regulatory enforcement actions and penalties.

We are required to monitor, evaluate, and observe laws and other requirements relating to financial and trade sanctions and embargoes set by the EU, the Deutsche Bundesbank, Germany's Federal Office for Economic Affairs and Export Control, and other authorities, such as the US Treasury Department's Office of Foreign Assets Control (OFAC) and the UK Treasury Department. If we breach such laws and requirements, we can be subject, and have in the past been subject, to material regulatory enforcement actions and penalties.

Transactions with counterparties in countries designated by the US State Department as state sponsors of terrorism or persons targeted by US economic sanctions may lead potential customers and investors to avoid doing business with us or investing in our securities, harm our reputation or result in regulatory or enforcement action which could materially and adversely affect our business.

We engage or have engaged in a limited amount of business with counterparties, including government-owned or -controlled counterparties, in certain countries or territories that are subject to comprehensive US sanctions, including Iran and Cuba (referred to as "Sanctioned Countries"), or with persons targeted by US economic sanctions (referred to as "Sanctioned Persons"). US law generally prohibits US persons or any other persons acting within US jurisdiction from doing business with Sanctioned Countries or Sanctioned Persons. Additionally, US indirect or "secondary" sanctions threaten retaliation against certain activities, including categories of transactions with certain entities and countries, by non-US persons entirely outside of US jurisdiction. Thus, US regulations may extend to activities in other geographic areas and by non-US persons depending on the circumstances. Our US subsidiaries, branch offices, and employees are, and our non-US subsidiaries, branch offices, and employees may become, subject to those prohibitions and other regulations.

We are a German bank and our activities with respect to Sanctioned Countries and Sanctioned Persons have been subject to policies and procedures designed to avoid the involvement of persons acting under US jurisdiction in any

managerial or operational role and to ensure compliance with United Nations, European Union and German sanctions and embargoes; in reflection of legal developments in recent years, we have further developed our policies and procedures with the aim of ensuring – to the extent legally permitted – compliance with regulatory requirements extending to other geographic areas regardless of jurisdiction. However, should our policies prove to be, or have been, ineffective, we may be subject to regulatory or enforcement action that could materially and adversely affect our reputation, financial condition, or business. We have taken action to reduce the risk of compliance violations. In 2007, our Management Board decided that we will not engage in new business with counterparties in countries such as Iran, Syria, Sudan and North Korea and to exit existing business to the extent legally possible. It also decided to limit our business with counterparties in Cuba. Iran, North Korea Sudan and Syria are currently designated as state sponsors of terrorism by the US State Department.

We had a representative office in Tehran, Iran, which we discontinued on December 31, 2007. Our remaining business with Iranian counterparties consisted mostly of participations as lender and/or agent in a few large trade finance facilities arranged before 2007 to finance the export contracts of exporters in Europe and Asia. The lifetime of most of these facilities is ten years or more and we were legally obligated to fulfil our contractual obligations. We do not believe our business activities with Iranian counterparties are or had been material to our overall business, with the outstanding loans to Iranian borrowers representing substantially less than 0.01 % of our total assets over recent years. As of December 31, 2018, those loans were fully repaid, and the revenues from such activities represented less than 0.01 % of our total revenues for the year ended December 31, 2018.

In recent years, the United States has taken steps to deter foreign companies from dealing with Iran by providing for a variety of secondary sanctions against companies engaged in targeted activities there. Many of these secondary sanctions were suspended following the occurrence on January 16, 2016 of “Implementation Day” of the Joint Comprehensive Plan of Action (referred to as the “JCPoA”) between the “P5+1” parties and Iran, but they were re-instated between May and November 2018 by the United States following its withdrawal from the JCPoA. Following the Implementation Day, we engaged in new activities with respect to Iran, but only to a limited extent. We executed cash payments in Euro from or to Iran on behalf of our own non-Iranian clients with enhanced due diligence. We remained restrictive towards any new trade finance activities and did not engage in loan arrangements with Iranian counterparties. We do not believe we have engaged in activities likely to result in the imposition of sanctions under Iran-related secondary sanctions, but we do engage in limited non-US dollar transactions with certain German branches or offices of Iranian banks that are targets of US secondary sanctions, and the US authorities have considerable discretion in applying the statutes, and any imposition of sanctions against us could be material. In light of the inherent regulatory, operational and reputational risks resulting from this environment and in the wake of the repositioning of the US Government in relation to the JCPoA, which became fully effective on November 5, 2018, we have processed the aforementioned cash payments only in very restricted cases and have since then further restricted our approach.

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As required by Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012 (Section 13(r) of the Securities Exchange Act of 1934, as amended) we have disclosed certain information regarding our activities or transactions with persons subject to US sanctions against Iran and other persons subject to such provision. Such disclosure is set forth in the section of this document entitled “Disclosures Under Iran Threat Reduction and Syria Human Rights Act of 2012”, which follows “Item 16H: Mine Safety Disclosure”.

We are also engaged in a limited amount of business with counterparties domiciled in Cuba, which is not subject to any United Nations, European Union or German embargoes. The business consists of a limited number of letters of credit and of cash payments, each without a US nexus, and it represented substantially less than 0.01 % of our assets as of December 31, 2018. The letters of credit served to finance commercial products such as machinery as well as

medical products.

We have set up appropriate processes and procedures aimed at complying with other substantial changes in US economic sanctions that have occurred since 2017. In August 2017, the United States enacted the “Countering America’s Adversaries Through Sanctions Act” (referred to as “CAATSA”), which codifies existing US sanctions against Russia (including designation of Russian entities under US sanctions), expands US secondary sanctions against Russia, tightens existing sectoral sanctions (targeting specific sectors of the Russian economy), and permits the imposition of sectoral sanctions against additional sectors of the Russian economy. In particular, expanded US secondary sanctions under CAATSA allow for the imposition of US sanctions on non-US entities who engage in “significant” transactions with Russian SDNs or specific entities in the Russian defense and intelligence sectors. We do not believe we have engaged or are currently engaged in any transactions with Russian entities that violate, or are sanctionable under, US sanctions. However, given the broad discretion US authorities have in interpreting and enforcing US sanctions, there can be no assurances that US authorities will not bring enforcement actions against us, or impose secondary sanctions on us for our ongoing activities. Any such actions could have a material impact on our business and harm our reputation. It is also possible that the United States could impose broader sanctions on Russia or Russian entities in the future and that such sanctions could have a material impact on our business activities.

Additionally, since 2017, the US Administration has imposed number of sanctions against the Government of Venezuela and Venezuelan officials. These sanctions prohibit, inter alia, transactions or other dealings by US persons or within US jurisdiction involving new debt of and certain bonds issued by the Government of Venezuela (including state-owned or state-controlled enterprises), the direct or indirect purchases of securities from the Government of Venezuela, or (beginning on January 28, 2019) virtually all unlicensed Petróleos de Venezuela S.A. transactions. A substantial portion of economic activity within US jurisdiction involving the Government of Venezuela is now prohibited by US sanctions. We have taken appropriate steps and established appropriate processes and procedures aimed at complying with these US sanctions against the Government of Venezuela. In response to these US sanctions, we have wound down several client relationships. With respect to entities of the Government of Venezuela, we are currently only engaged in legacy transactions. We do not believe that any of our remaining activities related to the Government of Venezuela violate US sanctions. However, given the broad discretion US authorities have in interpreting and enforcing US sanctions, there can be no assurances that US authorities do not allege that our ongoing activities violate US sanctions.

We are aware, through press reports and other means, of initiatives by governmental and non-governmental entities in the United States and elsewhere to adopt laws, regulations or policies prohibiting transactions with or investment in, or requiring divestment from, entities doing business with Sanctioned Countries, particularly Iran. Such initiatives may result in our being unable to gain or retain entities subject to such prohibitions as customers or as investors in our securities. In addition, our reputation may suffer due to our association with such countries. Such a result could have significant adverse effects on our business or the price of our securities. It is also possible that new direct or indirect secondary sanctions could be imposed by the United States or other jurisdictions without warning as a result of geopolitical developments.

Item 4: Information on the Company

History and Development of the Company

The legal and commercial name of our company is Deutsche Bank Aktiengesellschaft. It is a stock corporation organized under the laws of Germany.

Deutsche Bank Aktiengesellschaft originated from the reunification of Norddeutsche Bank Aktiengesellschaft, Hamburg, Rheinisch-Westfälische Bank Aktiengesellschaft, Düsseldorf, and Süddeutsche Bank Aktiengesellschaft, Munich. Pursuant to the Law on the Regional Scope of Credit Institutions, these were disincorporated in 1952 from Deutsche Bank, which had been founded in 1870. The merger and the name were entered in the Commercial Register of the District Court Frankfurt am Main on May 2, 1957.

We are registered under registration number HRB 30 000. Our registered address is Taunusanlage 12, 60325 Frankfurt am Main, Germany, and our telephone number is +49-69-910-00. Our agent in the United States is: DB USA Corporation, c/o Office of the Secretary, 60 Wall Street, Mail Stop NYC60-4099, New York, NY 10005.

For information on significant capital expenditures and divestitures, please see “Management Report: Operating and Financial Review: Deutsche Bank Group: Significant Capital Expenditures and Divestitures” in the Annual Report 2018.

The Securities and Exchange Commission (“SEC”) maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, such as Deutsche Bank Aktiengesellschaft, with the address <http://www.sec.gov>. Our filings are available on the SEC’s Internet site under File Number 001-15242. Our Internet address is <http://www.db.com>.

Business Overview

Our Organization

Please see “Management Report: Operating and Financial Review: Deutsche Bank Group: Our Organization” in the Annual Report 2018. For information on net revenues by geographic area and by corporate division please see Note 4 “Business Segments and Related Information: Entity-Wide Disclosures” to the consolidated financial statements and “Management Report: Operating and Financial Review: Results of Operations: Segment Results of Operations” in the Annual Report 2018.

Management Structure

Please see “Management Report: Operating and Financial Review: Deutsche Bank Group: Management Structure” in the Annual Report 2018.

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Our Business Strategy

We are a leading European bank with global reach supported by a strong home base in Germany, Europe’s largest economy. We provide services in commercial and investment banking, retail banking as well as wealth and asset management products to corporations, governments, institutional investors, small and medium-sized businesses, and private individuals.

In the second quarter of 2018, we announced changes to our strategy and updates to our financial targets. Management is focused on materially improving returns to shareholders over time and on deploying our balance sheet and other resources to the highest return activities consistent with our client franchise and risk appetite. To achieve these primary objectives we have defined four key strategic imperatives: First, shift the bank to a more stable revenue and

earnings profile. Second, execute on clearly defined strategies in our Private & Commercial Bank (PCB) and our Asset Management (AM) businesses. Third, reshape our Corporate & Investment Bank (CIB) towards a model which emphasizes our core strength in transaction banking, capital markets, financing and treasury solutions. And fourth, reduce our costs and commit to an uncompromising cost culture.

As the basis of our strategy, we seek to continue building on our 2018 achievements: we intend to retain our cost discipline and plan to continue to reduce expenditures. However, we also aim to begin a new phase – one of controlled growth. We aim to grow in all our business divisions, at the same time not relinquishing our cost discipline or compromising our integrity.

Achieving a more stable revenue and earnings profile

We aim to increase the share of revenues coming from stable sources characterized by lower earnings volatility and to expand our more stable businesses – Private & Commercial Bank, our Asset Management division DWS and Global Transaction Banking. The more stable business mix is intended to lower our funding costs, support our credit rating and make our performance more resilient even in very challenging environments or markets.

Growth in our Private & Commercial Bank and DWS

Our Private & Commercial Bank comprises the three business units Private and Commercial Business (Germany), Private and Commercial Business (International) and Wealth Management (Global).

Our Private and Commercial Business (Germany) serves more than 20 million private and commercial clients and pursues a differentiated, customer-focused approach with two main distinct and strong brands: Deutsche Bank and Postbank. The strong positioning of the two brands, the broad customer base and the use of complementary strengths build the basis for significant cost and revenue synergies of € 900 million annually which we aim to fully realize in 2022 and beyond. A new operating model with a joint infrastructure and product platform as well as a joint management will help to pursue towards the achievements of these targets.

In our Private and Commercial Business (International), we continue to sharpen focus and invest into our core markets. While streamlining our geographic footprint with the completed partial exit from Poland and the ongoing disposal of our business in Portugal, we are investing into our Italian, Spanish, Belgian and Indian operations as we view them as attractive and growing markets.

In Wealth Management (Global) we seek to grow our market share, both in Germany and internationally.

We are also proceeding with our investments in digital solutions for banking and non-banking products through further equity investments into strategic partners and enhancements of our digital platform.

For DWS, with the IPO now completed, we are focusing on growing assets under management, improving efficiency and profitability and driving strong DWS shareholder return, including a robust dividend.

Reshaping Corporate & Investment Bank

We intend to remain a leading European Corporate & Investment Bank with global reach. As part of the restructuring announced and completed in 2018, CIB will focus on its core product strengths and key markets.

We announced three strategic updates for CIB. First, we optimized our Origination and Advisory business: we will maintain a strong presence but we are focusing on sectors and segments that are most relevant for our most important clients or in which we have a strong global position. Second, we pivoted to our strengths in Fixed Income & Currencies (FIC) focused around our core strengths while reducing exposure to US Rates. Third, in Equities, we refocused our resources around our existing profitable customer relationships.

Going forward, we will focus our resources on our key strengths in transaction banking, capital markets, financing and treasury solutions. Additionally, we intend to significantly reduce our cost to serve via workforce reductions and through modernization of platform.

Rigorous cost management

Given the progress made in reducing adjusted costs in 2018, management is now committed to reduce adjusted costs by a further € 1 billion to € 21.8 billion in 2019, thereby lowering the target we set ourselves in 2018 by € 200 million. Costs in 2019 should benefit from the full run rate of previously enacted measures as well as from our planned additional headcount reductions, the synergies from our German retail merger and completion of the sale of our Portuguese retail operations. We also aim to benefit from management's ongoing effort to reduce non-compensation costs, including further rationalizing vendor spending and our real estate footprint. At the same time, we will continue to invest in our technology and controls.

Our Financial Targets

Near-term operating targets

- Post-tax Return on Average Tangible Equity of greater than 4 % in 2019
- Adjusted costs of € 21.8 billion in 2019
- Full-time equivalent internal employees of below 90,000 by year-end 2019

Long-term operating target

- Post-tax Return on Average Tangible Equity of circa 10 % in a normalized environment and on the basis of the achievement of our cost targets

As we execute on our near- and long-term operating targets, we intend to continue managing our balance sheet conservatively, with the following capital targets:

Capital targets

- CRR/CRD 4 Common Equity Tier 1 capital ratio above 13 %
- CRR/CRD 4 Leverage Ratio (phase-in) of 4.5 % over time
- A competitive dividend payout ratio

Strategy implementation

In 2018, we delivered on our adjusted cost and headcount targets. Our adjusted costs of € 22.8 billion, were below our € 23 billion target. Noninterest expenses were € 23.5 billion. On a full-time equivalent (FTE) basis, we reduced the number of internal employees to 91,737 at year end 2018, compared to our target of below 93,000. Our Common Equity Tier 1 ratio at 13.6 % is above our target, and our leverage ratio on a phased-in basis improved to 4.3 % compared to 4.5 %, our target over time.

Strategy in Corporate & Investment Bank

The Corporate & Investment Bank (CIB) comprises our Global Transaction Banking, Origination & Advisory, Sales & Trading (FIC) and Sales & Trading (Equity) businesses. CIB was created in 2017 with the aim to ensure greater alignment of product and sales efforts, enabling the bank to deliver a better service to clients, a more focused resource allocation and to drive cost efficiency.

During 2018, CIB announced headcount and resource reductions as part of the division's strategic reshaping. These actions were successfully delivered across the second and third quarter of 2018. Measures included: reprioritizing our presence in Origination & Advisory in sectors where we have strong market position; decreasing leverage exposure within Equities, mainly in Prime Finance, and US Rates including repo financing; and reducing our Equities headcount by approximately 25 %. We continued to implement further measures to reduce our cost base, while the risk weighted assets and leverage exposure of assets identified as not consistent with CIB's strategy continue to roll off as planned. Through achievement of greater revenue and resource productivity as well as cost efficiency we aim to improve CIB's profitability going forward.

In 2019, CIB is focused on delivering controlled revenue growth from targeted resource deployment and investment. This will be supported by a more focused client coverage and product offering, leading to an improved ability to direct resources to the highest return relationships, ultimately increasing share of clients' "wallet" (amounts clients spend on banking products). CIB continues to reinvigorate its client-led franchise through more effective coverage, as evidenced by the creation of an integrated Institutional and Treasury Coverage Group in 2018. The aim of this group is to achieve synergies from closer alignment and shared expertise. Further expense management initiatives in 2019 are focused on middle and back office functions.

We continue to see a clear opportunity for CIB to occupy an attractive position as one of the handful of globally relevant European participants in the Global CIB market. CIB intends to pursue a number of objectives to achieve revenue growth:

Global Transaction Banking

We intend to capitalize on our market position in payments, improving our liquidity, collateral and risk management platforms, implementing liquidity initiatives and achieving further enhanced product offering opportunities with foreign exchange as well as the provision of credit to provide payments solutions. We also continue to see growth potential for our global trade finance franchise, especially in structured transactions.

Origination and Advisory

We intend to regain market share, building on the positive momentum in Debt Origination in 2018, in particular with regards to leveraged finance through controlled resource deployment, in addition to an intensified focus on investment grade acquisition financing. Within Equity Origination our focus is on initial public offerings, acquisition financing and corporate derivatives. In Advisory we intend to reinvigorate our focus on winning cross-border mandates.

Sales & Trading Fixed Income and Currencies

We target retaining a top-five position globally and a top-three position in EMEA. We intend to maintain a leading Credit Financing and Solutions franchise with particular emphasis on Asset Based Financing, Commercial Real Estate, and the Transport, Infrastructure and Energy sector. We continue to focus on building innovative technology solutions, for example in foreign exchange. Within Rates, we target opportunities with regards to customized solutions for insurance companies, pension funds and other investors.

Sales & Trading Equities

We aim to build on the strengths of our refocused platform. We target a further build out of electronic solutions within cash trading and to deliver improved client service and offering within derivatives. We also continue to focus on optimizing our client balances in Prime Finance.

Finally, the portfolio of assets identified as not consistent with CIB's strategy continues to roll off as planned and the capacity released will be redeployed to core areas in coming years.

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Strategy in Private & Commercial Bank

For Private & Commercial Bank Corporate division, following the successful merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank in the second quarter of 2018, we took further actions in the fourth quarter of 2018 to achieve our future organizational structure. Going forward, PCB consists of the following business units: Private and Commercial Business (Germany), Private and Commercial Business (International) and Wealth Management (Global).

Private and Commercial Business (Germany)

In our Private and Commercial Business (Germany) business division, we pursue a differentiated, customer-focused approach with two main brands – “Deutsche Bank” and “Postbank”. With our “Deutsche Bank” brand we focus on providing our private customers with banking and financial products and services that include sophisticated and individual advisory solutions. For small and medium-sized corporate clients, we provide an integrated commercial banking coverage model. The focus of our “Postbank” brand remains on providing our retail and corporate customers with standard products and daily retail banking services. In cooperation with Deutsche Post DHL AG, we also offer postal and parcel services in the Postbank branches.

As announced in March 2017, Postbank AG and the Deutsche Bank private and commercial client business were merged in the second quarter of 2018 to form DB Privat- und Firmenkundenbank AG (DB PFK AG). The firm operates with a strengthened position in our home market as the largest private and commercial bank in Germany. The new entity aims to be the leading private sector bank in Germany by capturing market opportunities and leveraging joint product strengths. The basis for establishing an integrated steering and governance with one head office, management team and IT platform, single product management and harmonized regional coverage across Germany was laid, and the detailed transformation and implementation process have started.

In 2018, we further optimized the Private and Commercial Business (Germany) sales organization and also enhanced our sales infrastructure as well as branch formats. To streamline our head office, we announced a dedicated leadership team for our product governance and management and defined the head office target operating model. Additionally, we strengthened our digital platform by the launch of our digital brand “Yunar” and we were among the first banks in Germany to offer Apple Pay to our clients.

DB PFK AG expects its ongoing digital efforts to support efficiency goals and create an opportunity to gain market share. The company intends to implement its agenda to digitalize its business based on three core principles: First, transformation of the core business through entire digitalized end-to-end processes; second, innovative segment portals; and third, enhancement of the digital ecosystem to unlock new target groups and generate growth. Due to the continuous low interest rate environment, the increasing competitive pressure and regulatory requirements, the bank also focuses on integration-related efficiency measures to reduce the cost base and on fostering credit and investment

volume growth as well as fee-based products to increase revenues. In addition, the launch of new digital offerings is intended to not only enhance the customer experience but also generate higher revenues.

Private and Commercial Business (International)

In Private and Commercial Business (International), we provide advisory and relationship banking services to predominantly affluent clients and small and medium-sized companies, complemented by a strong retail proposition in Italy. We are present in selective attractive markets in Europe (Italy, Spain and Belgium) and India. We offer a comprehensive range of products with a strong emphasis on investment products and financing solutions, leveraging DB Group's long-standing expertise in commercial business and universal banking. We reviewed and updated our strategies of our continued businesses to position them for further targeted growth. In Belgium, we will focus on investment advisory business with affluent and private banking clients, while we will scale up our commercial business in India, supported by a digital transformation.

In 2018, we continued to execute the bank's strategy to sharpen its focus and reduce complexity. The announced disposal of the majority of our retail business in Poland was successfully closed in the course of the fourth quarter of 2018, while the sale of the local retail business in Portugal is progressing on track and the parties intend to close the transaction in the second quarter of 2019, subject to regulatory approvals and other conditions. In Italy and Spain, we have further refined our business models to improve client coverage and efficiency, supported by an optimized sales network and streamlined organization, and we are continuing to focus on improving the returns of our businesses in India and Belgium.

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Wealth Management (Global)

In Wealth Management (Global), we combine deep local heritage and global reach, offering expert advice with an extensive range of services from standardized to highly tailored solutions paired with industry-leading risk return engineering, aiming to deliver lasting value for our clients. Our focus is on serving high-net-worth (HNW) and ultra-high-net-worth (UHNW) individuals, their families and businesses as well as professional clients such as Family Offices providing them access to a full product suite and connecting them to the bank's wider capabilities. We plan to further expand our global presence by organically hiring front office staff in selected core growth markets and to continue to digitally enhance our client experience. In addition to our growth strategy, we constantly aim to make our global Wealth Management business more focused and efficient.

In 2018, we made further progress towards our strategic agenda focusing on improving the efficiency and robustness of our platform while putting emphasis on growth, notably in core ultra-high-net-worth (UHNW) markets, through targeted front-office hiring. Over the course of 2018, WM further invested in strengthening its control framework. At the same time, various projects were undertaken aimed to enhance the client experience through improved digital offerings, quicker onboarding, as well as approaching clients with a more nuanced client service model. A significant milestone in the simplification of our management structure was the launch of a new regional structure in the fourth quarter of 2018 moving from four to three regions (Americas, Europe, Emerging Markets). And we successfully completed the integration of Sal. Oppenheim's Wealth Management business into Deutsche Bank Group in the second quarter of 2018.

Strategy in Asset Management

Asset Management (AM) is a core business of Deutsche Bank that has generated stable income and relatively high returns by earning recurring fee-based revenues. AM has a market-leading position as the largest retail asset manager

in Germany and the number two position in European Exchange Traded Funds (ETFs)/ Exchange Traded Products (ETPs), based on publicly disclosed assets under management (AuM).

Following the successful IPO of DWS in In March 2018, we became a listed company on the Frankfurt Stock Exchange, enabling us to operate more autonomously and build the foundation for long-term growth. As a standalone asset manager, we have established the DWS brand globally for our business in order to ensure a consistent brand appearance and to enhance our external perception. The integration of service and infrastructure functions from DB Group into DWS Group seeks to enable us to achieve further operational efficiencies across the platform, including process improvements to reduce costs and enhance client experience.

DWS and BNP Paribas Securities Services jointly decided not to proceed with the transfer of our fund administration services in Germany and Luxembourg to BNP Paribas Securities Services and the provision of depositary and custody services to our retail funds, as announced in June 2018.

Asset Management has seen continued progress with our Environment, Social and Governance (ESG) strategy, illustrated by the recent expansion of our product suite across the Active, Passive and Alternatives investment spaces.

An efficiency and transformation program has been established with dedicated initiatives to challenge and reduce expenditures as well as to enhance efficiency and productivity by simplifying our operating model.

Over the medium term, the industry's global AuM are expected to substantially increase, driven by strong net flows in passive strategies, alternatives and multi asset solutions, as clients increasingly demand value-for-money, transparency and outcome oriented products. Due to our capabilities in active and passive products, alternative investments and multi asset solutions, we believe AM is well-positioned to grow market share amid these industry growth trends, supported by strategic hires into the client coverage teams, in part to bolster institutional growth, as well as support the Passive business. While AM's digital capabilities are also creating new channels for it to distribute products and services, bottom line results are expected to be challenged by fee compression, rising costs of regulation and competitive dynamics. In the face of this challenge, AM intends to focus its growth initiatives on products and services where it has a competitive advantage, while also maintaining a disciplined cost base. We believe that AM, with its strong and diverse investment capabilities, is well positioned to address the challenges facing the industry and capture opportunities.

We intend to undertake a number of strategic initiatives to support our medium term targets and deliver shareholder value through net flows, revenue growth, cost discipline and dividend distributions. We believe the broad range of well-performing products and investment solutions gives AM a strong basis for growing assets and revenues. The business-growth goals will be supported by a planned medium term investment in our digital capabilities, the investment group, and additional distribution hires and adding new distributors to the proprietary digital investment platform. Through cost efficiency initiatives, we are targeting medium-term annual savings in our adjusted costs relative to 2018.

Our Corporate Divisions

Please see "Management Report: Operating and Financial Review: Deutsche Bank Group: Corporate Divisions" in the Annual Report 2018.

The Competitive Environment

2018 The Global Economy

The global economy showed robust growth with industrialized countries saw a peak in their economic cycle, while emerging markets slowed somewhat towards the end of the year 2018. Trade tensions between the US and China as well between the US and Europe reached a level that weighed on global trade. Meanwhile the strong US economy provided positive impetus for global growth. Against this backdrop, global economic growth remained flat at 3.8 % in 2018, following 3.8 % in 2017. The global inflation rate increased to 3.3 % in 2018. In the industrialized countries, GDP grew by 2.2 % and consumer prices rose by 2.0 % while in emerging markets economies GDP increased by 4.9 % and inflation reached 4.1 %.

Over the course of 2018, the economic outlook for the euro area slowly deteriorated. The economy expanded by 1.8 %, roughly 0.5 percentage points below the expectations at the start of the year, due to temporary effects in some member states as well as the worsened external economic environment. Growth was supported by domestic demand underpinned by solid income growth and easy financial conditions. While monetary policy remained accommodative, the ECB phased out its net asset purchases. Consumer prices in the euro area rose by 1.8 % in 2018. With a GDP growth of 1.4 % in 2018, German GDP growth surprised to the downside. Delays in emissions-related certification of new vehicles hampered automobile production and thus macroeconomic value added. A very tight labor market led to strong wage agreements.

The US economy showed a strong performance. Supported by tax cuts, fiscal spending as well as supportive financial conditions and consumer spending backed by wage growth and a tight labor market, US GDP grew by 2.9 % in 2018. The inflation rate reached 2.4 % and thus stood above the Federal Reserve's target of 2 %. The US central bank's monetary policy responded with four interest rate hikes in 2018.

Japan's GDP growth slowed considerably to 0.7 % in 2018 due to less dynamic private consumption spending and lower employment growth as well as weaker external demand. The inflation rate doubled to 1.0 %, following 0.5 % in 2017.

In 2018, GDP in the emerging markets increased by 4.9 %. With GDP growth of 6.2 %, the emerging markets in Asia were once again a global driving force as intra-Asian trade remained strong. At 6.6 %, the Chinese economy grew somewhat more strongly than expected at the beginning of 2018. Chinese inflation edged up to 2.1 %. The government has maintained a tight policy stance in the property sector. Lower land sales resulted in sliding fiscal revenues. Chinese exports were resilient despite growing trade tensions throughout 2018.

2019 Outlook

Global economic activity is still set to expand in 2019 but with a slower pace than in 2018. We expect global GDP to grow by 3.5 % due to a flattening of growth in the US and a slower growth in China as well as in Europe. While economic fundamentals are solid, a less accommodative monetary policy could lead to heightened risks with more frequent incidents of higher volatility. The global inflation rate is forecast to slow gradually to 3.1 %, from 3.3 % in 2018. For industrialized countries, we expect GDP growth to slow to 1.7 % and consumer prices to increase by 1.4 % in 2019. Economic growth in the emerging markets is projected to decline slightly to 4.6 % in 2019 while inflation is expected to rise to 4.2 %, from 4.1 % in 2018.

In the Eurozone, we expect GDP growth to slow to 0.9 % in 2019, as the deteriorating external environment threatens to overpower domestic resilience. The growth outlook within the Eurozone should be supported by lower oil prices and fiscal easing in certain large member states including France. These positive benefits could be challenged by one-off factors including the prolonged weakness in the German automotive sector and a no deal outcome in Brexit

negotiations. In 2019, Eurozone inflation is expected to fall to 1.3 %. Following GDP growth of 1.5 % in 2018, we expect the German economy to expand by 1 % in 2019, driven by domestic demand.

We expect US economic growth to decelerate slightly to 2.5 % in 2019. Economic growth should be supported by strong domestic consumption and capital expenditures. Tax cuts and fiscal spending should act as a tailwind and should support the economy through the year. Escalation of the trade disputes, leading to higher tariffs could provide a material downside risk. We expect the Federal Reserve to raise its policy rate twice in 2019 to 2.875 %. We expect the inflation rate to decline to 1.5 % in 2019, reflecting lower energy prices.

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The Japanese economy is expected to decline by 0.7 % in 2019, below its potential growth rate. Growth is likely to be negatively impacted by slower capital expenditure and decelerating investment growth as well as the impact of the increase in consumption taxes. These negative effects should be partly offset by higher public spending. We expect net exports to be a minor headwind to GDP growth, although exports could positively surprise in the event of successful trade negotiations between the US and Japan at the start of 2019. We expect the inflation rate of 0.4 % in 2019.

In 2019, economic growth in emerging markets is projected to decline slightly to 4.6 %, and in Asia (excluding Japan) to 5.7 %. Inflation in emerging markets is expected to rise to 4.2 %, from 4.1 % in 2018. In 2019, growth in the Chinese economy is forecast to slow modestly to 6.1 %, the lowest growth rate for decades. The slower growth is likely to be driven by slower growth in the property market, weaker consumer sentiment and the US-China trade war. The negative impacts should be partly offset by expected tax cuts, easing of property regulations and an increase in the credit supply. Two more cuts in the reserve requirement ratio should also be supportive. Inflation is forecasted to increase to 2.4 % in 2019.

The heat-map of global risks is modestly changed from 2018. Macroeconomic risks are now more pronounced to the downside, especially in Asia and Europe. China is slowing as policymakers focus on deleveraging and fiscal policy tightens, but officials still have available tools to respond to a downturn. Indeed, we expect further monetary easing this year. In Europe, growth is stagnating and the debt burden in some countries, especially Italy, is a danger. Political risks also remain elevated, which may weigh on business investment and economic activity, as Brexit negotiations continue and elections for the European Parliament are due this spring. Other snap elections are possible across the major European countries. In the US, we remain attuned to the risk of higher inflation, given the extremely tight levels of labor market slack, as well as any signs of a more substantive slowdown. We anticipate a slower pace of growth in 2019 versus 2018, but do not view a recession as likely.

Competitor Landscape

Against this backdrop, Deutsche Bank competes in the financial services sector with a spectrum of competitors, who include other universal banks, commercial banks, savings banks, public sector banks, brokers and dealers, investment banking firms, asset management firms, private banks, investment advisors, payments services providers, financial technology firms and insurance companies. Some of the competitors are global like Deutsche Bank, while others have a regional, product or niche client footprint. Deutsche Bank competes on a number of factors, including the quality of client relationships, transaction execution, products and services, innovation, reputation and price.

The European banking industry's performance was roughly stable in 2018. On the macroeconomic front, slower growth contributed to a slight fall in revenues, offset by lower expenses and a further declining loan loss provisions. The low interest rate environment continues to keep the net interest margin under pressure, yet loan growth with non-financial companies is at its highest since the financial crisis. At the microeconomic level, several European banks are still running complex restructuring programs, while also delivering on sizeable regulatory requirements.

Good progress has been made on all these fronts, however this has also led to management distraction and the loss of market share to US competitors within Europe.

The European banking sector in 2019 may face greater headwinds from a deteriorating macroeconomic environment, but may also benefit from lower restructuring and litigation costs and from increased clarity on major regulatory initiatives. While the potential benefits from monetary tightening by central banks remain in doubt, the single biggest political and regulatory risk for European banks remains the uncertainty and complexity created by the decision of the United Kingdom to leave the European Union in the so-called “Brexit”, scheduled to be effective on March 29, 2019. This has required extensive contingency planning by us and the industry generally during 2018 and is likely to have implications for the structure and operations of all banks currently operating cross-border from entities or branches in the United Kingdom once these plans are executed. While political negotiations continue, there is no clarity yet around precisely what constraints on cross-border banking activity may emerge and what the implications will be for us or our peers. In the absence of any clarity regarding the ratification of the withdrawal agreement and the availability of a transition period, preparation against a March 29, 2019 hard Brexit has accelerated. The related risks in 2019 and thereafter will depend on the availability of relief from European and national regulators.

In our home market, Germany, the retail banking market remains fragmented and our competitive environment is influenced by the three pillar system of private banks, public banks and cooperative banks. Competitive intensity has increased in recent years following some consolidation activity, particularly among public regional banks (Landesbanken) and private banks, and increased activity levels from foreign players.

Looking at the wider banking ecosystem, the evolution of financial technology firms remains as much an opportunity as a challenge for banks. While we see the risk of banking disruption in select product areas, particularly the unregulated segments, there is also the opportunity to selectively partner with financial technology firms and leverage their solutions to become more efficient and/or develop differentiated delivery channels for the end clients.

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Regulatory Environment

The uncertainty around the outcome and timing of key regulations has declined with the finalization of the Basel 3 package at the end of 2017 and the implementation date of the revised directive on markets in financial instruments, referred to as MiFID 2, and the related regulation on markets in financial instruments (MiFIR) in early 2018. As the flow of new legislative proposals under the post-crisis global regulatory reform agenda has slowed, the focus of regulators has turned to implementation and supervision.

While a number of regulatory reforms impacting Deutsche Bank are already in force, others continue to be developed on an international level and implemented regionally. Where primary legislation has been agreed on by lawmakers, regulators have yet to develop detailed rules, or determine their cross-border application, which might lead to a fragmented and inconsistent landscape. Moreover, certain post-crisis reforms which have already been implemented are or have been subject to reviews that might lead to additional changes in legislation in the coming years. The impact of the implementation of such final or revised standards on specific institutions remains uncertain. In some instances there remains a lack of clarity around the final rules and the impact that they might have on banks in different regions.

During 2018, a number of international developments in the area of banking regulation and supervision have been implemented and will continue to be further refined, in particular with a view to strengthening international standards to create financially resilient institutions and ensuring resolvability of banks.

Capital, liquidity and leverage requirements – On November 23, 2016, the European Commission published a

comprehensive package of reforms (referred to in the following as the “banking reform package”) to further strengthen the resilience of European Union banks. The proposals will incorporate various remaining elements of the regulatory framework agreed within the Basel Committee on Banking Supervision (“Basel Committee”) and the Financial Stability Board (“FSB”) to refine and supplement the global regulatory framework established by the so-called Basel Accords (Basel 1, 2 and 3). This includes more risk-sensitive capital requirements, in particular in the area of market risk, counterparty credit risk, and for exposures to central counterparties, methodologies that reflect more accurately the actual risks to which banks may be exposed, a binding leverage ratio, a binding net stable funding ratio, tighter regulation of large exposures, and a requirement for global systemically important institutions (“G-SIIs”), such as Deutsche Bank, to hold certain minimum levels of capital and other instruments which are capable of bearing losses in resolution (“Total Loss-Absorbing Capacity” or “TLAC”). Other proposed measures are aimed at improving banks’ lending capacity to support the European Union economy and at further facilitating the role of banks in achieving deeper and more liquid European Union capital markets. On December 4, 2018, the European Parliament and the Council of the European Union reached a provisional political agreement with respect to the banking reform package. The banking reform package is expected to enter into force in the first half of 2019. While many provisions will not apply until 2021, certain parts, including the TLAC requirements, are expected to apply immediately when the provisions of the banking reform package enter into force.

At the international level, the Basel Committee published its final agreement (“December 2017 Agreement”) on further revisions to the Basel 3 framework that aim to increase consistency in risk-weighted asset calculations and improve the comparability of banks’ capital ratios. The December 2017 Agreement includes, among other things, changes to the standardized and internal ratings-based approaches for determining credit risk, revisions to the operational risk framework, and an “output floor”, set at 72.5 %. The “output floor” limits the amount of capital benefit a bank can obtain from its use of internal models relative to using the standardized approach. This package of reforms is intended to finalize the Basel 3 framework and would reduce the ability of banks to apply internal models, while making the standardized approaches more risk-sensitive and granular. In addition, the December 2017 Agreement introduces a leverage ratio buffer for global systemically important banks (“G-SIBs”), such as Deutsche Bank, to be met with Tier 1 capital and sets it at 50 % of the applicable risk-based G-SIB buffer requirement. The Basel Committee also reached agreement on an implementation date for this package of January 1, 2022, with a phase-in period of five years through January 1, 2027 for the output floor.

The banking reform package, when it enters into force, will likely affect our business by raising our regulatory capital and liquidity requirements and by leading to increased costs. The December 2017 Agreement could also affect our business by imposing higher capital charges when adopted into law.

Capital planning and stress testing – In 2018, the European Banking Authority (“EBA”) and the European Central Bank (“ECB”, our principal regulator) performed an EU-wide stress test, for which the EBA published the results on November 2, 2018. This exercise assessed the resilience of 48 EU banks, including Deutsche Bank, and of the EU banking system to economic shocks. It analyzed both a ‘baseline’ scenario and a hypothetical ‘adverse’ scenario over a stress horizon up to the end of 2020. In 2018, the EBA’s ‘adverse’ scenario was substantially more severe than in the previous stress tests (2014 and 2016), notably because it assumed a deterioration of the European economy which is worse than under the assumptions used in previous tests.

This stress test was not a pass-fail exercise. The ECB, however, will use the results when deciding about future capital guidance. The results demonstrated Deutsche Bank’s resilience under stress and the strength of our balance sheet and capital position. Deutsche Bank’s fully loaded Common Equity Tier 1 (CET 1) ratio came out stronger than in previous stress tests despite a more severe ‘adverse’ scenario. Under the EBA’s ‘adverse’ scenario, credit, market and operational risk showed greater resilience. Notably, credit risk losses would account for 2.2 % of the capital ratio depletion in this

scenario, well below peer average.

We are subject to a supervisory review and evaluation process (“SREP”) for an ongoing assessment of risks, governance arrangements and the capital and liquidity situation, which is a review of the arrangements, strategies, processes and mechanisms of supervised banks on a regular basis, in order to evaluate risks to which these banks are or might be exposed, risks they could pose to the financial system, and risks revealed by stress testing. The SREP can result in Pillar 2 capital and liquidity requirements or guidance for the relevant institution.

DB USA Corporation, our main US intermediate holding company, was subject to the Federal Reserve Board’s Comprehensive Capital Analysis and Review for 2018. On June 28, 2018, the Federal Reserve Board publicly indicated that it did not object to DB USA Corporation’s 2018 capital plan on a quantitative basis, but that it did object for qualitative reasons. In its supervisory stress tests, the Federal Reserve Board projected that DB USA Corporation’s capital ratios would exceed the quantitative minimum requirements even under the supervisor’s hypothetical severely adverse stress scenario. DB USA Corporation will make its next capital plan submission to the Federal Reserve Board in April 2019, at which time DWS USA Corporation, our second US intermediate holding company, will submit its initial capital plan.

Recovery and resolution – The major jurisdictions where we have significant group operations have now finalized the implementation of the FSB’s Key Attributes for Effective Resolution Regimes. Under the European Union’s Single Resolution Mechanism, to which we are subject, competent authorities have far-reaching powers to impose resolution measures upon banks that are deemed to be failing or likely to fail. Resolution measures, in particular, include the power to reduce, including to zero, the nominal value of shares, or to cancel shares outright, and to write down certain eligible subordinated and unsubordinated unsecured liabilities, including to zero, or convert them into equity (commonly referred to as “bail in”). To ensure sufficient availability of liabilities with loss-absorbing capacity that could be bailed in, banks in the European Union must meet, or will have to meet, certain minimum requirements such as TLAC or MREL (as further explained below).

For a bank directly supervised by the ECB, such as Deutsche Bank, the Single Resolution Board (“SRB”) draws up the resolution plan, assesses the bank’s resolvability and may require legal and operational changes to the bank’s structure to ensure its resolvability.

In the United States, Deutsche Bank AG is required under Title I of the Dodd-Frank Act, as amended and the implementing regulations therefor, to prepare and submit periodically to US regulators a plan for the orderly resolution of its US subsidiaries and operations in the event of future material financial distress or failure (the “US Resolution Plan”). Deutsche Bank AG filed its most recent US Resolution Plan in June 2018 and received written regulatory feedback in December 2018. The Federal Reserve Board and FDIC found that Deutsche Bank’s US Resolution Plan had no deficiencies but identified one shortcoming in the plan, associated with governance mechanisms and related escalation triggers. Deutsche Bank is required to submit a response to its December 2018 feedback letter by April 5, 2019. Deutsche Bank’s response will discuss the remediation of the shortcoming as well as enhancements of its resolution capabilities. Both the remediation of the shortcoming and enhancements must be completed prior to the submission of our next US Resolution Plan, which is currently expected to be due on July 1, 2020.

Loss-absorbing capacity – Following the FSB’s final term sheet on TLAC in November 2015, several jurisdictions have started to implement the TLAC standard in their regulatory frameworks. The TLAC standard is designed to ensure that G-SIBs, such as Deutsche Bank, maintain enough capital and long-term debt instruments that can be effectively bailed-in to absorb losses and recapitalize the bank. The banking reform package intends to implement the

FSB's TLAC standard for G-SIBs by introducing a new "Pillar 1" minimum requirement for eligible liabilities (or "MREL") for G-SIIs (the European equivalent term for G-SIBs). This new requirement is based on both risk-based and non-risk-based denominators and is expected to be set at the higher of 18 % of total risk exposure and 6.75 % of the leverage ratio exposure measure following a transition period. It can be met with Tier 1 or Tier 2 capital instruments or debt that meets specific eligibility criteria. In addition, the competent authorities will have the ability to impose a TLAC add-on requirement on G-SIIs. We also are subject to TLAC requirements in other jurisdictions. For example, the Federal Reserve Board's rules implementing the TLAC standard in the United States are effective as of January 2019, with TLAC requirements that apply to US intermediate holding companies (such as ours) of non-US G-SIBs. These rules include a minimum TLAC requirement, a minimum long-term debt requirement and clean holding company requirements.

Completion of the Banking Union and reduction of non-performing exposures – A European Deposit Insurance Scheme (EDIS) is supposed to complete the Banking Union but the corresponding proposal is still under negotiation. Discussions have centered on the backstop to the Single Resolution Fund and EDIS. As some voices have requested more progress on risk reduction as a prerequisite for the implementation of any risk sharing arrangement, the recent focus has been to reduce non-performing exposures of banks in the European Union, and political agreement was reached in December 2018 on a proposal in this respect.

Development of the Capital Markets Union and related regulation – Before the backdrop of Brexit, financial markets in Europe are adapting to significant regulatory changes introduced by provisions included in MiFID 2 and MiFIR and other legal acts that have become effective in the recent past. The European Union aims to further strengthen the Capital Markets Union in future years. Related initiatives include a harmonized EU framework for covered bonds and a pan-European pension product. A European financial transaction tax is still under discussion.

Benchmarks – Following a number of conduct-related scandals involving financial benchmarks, regulatory initiatives by, among others, the International Organization of Securities Commissions ("IOSCO") have resulted in changes to the way benchmarks are being used, authorized and regulated globally. Financial benchmarks comprise a wide range of interest rate, currency, securities, commodity and other indices and reference prices. In the European Union, the EU Benchmarks Regulation came into force in January 2018, with a transition period until the end of 2019, with a proposed extension through 2021 for critical and third country benchmarks. The FSB has set up the Official Sector Steering Group (OSSG) to coordinate international work to review and reform interest rate benchmarks and welcomes progress that has been made on the identification and development of overnight risk-free rates ("RFRs"). These RFRs are considered to be more robust and less susceptible to market manipulation due to their transaction based nature. The FSB recommends the transition from existing IBOR rates to RFRs where the long-term viability of an IBOR is in question, i.e. LIBOR. Other jurisdictions pursue a two-rate approach with reform of existing benchmark rate while pursuing the identification of a RFR to devise robust fallbacks.

Digital Transformation – Digital transformation and the increased recognition of risks posed by new technologies as well as cyber risk and data protection are expected to be important areas of regulatory discussions, initiatives and action in 2019.

Climate change, environmental and social issues

The Sustainable Development Goals address the most pressing economic, social and environmental challenges of our time. These challenges include issues closely related to global warming and climate change, whose impacts have gained in importance in the public discourse. In 2018, there were major developments in defining the financial sector's role in combating climate change and supporting sustainable economic development. This resulted in a number of regulatory proposals known as the EU Action Plan for Sustainable Finance, which highlight a leading role financial institutions should take in contributing to low carbon development.

Another enduring global trend is poverty and migration. More than 800 million people around the world live in extreme poverty, while 65 million people are refugees (half of them children). Around 57 million children below the age of 10 have no access to schooling or education, and many youngsters are disenfranchised, even in the Western world. Goal 17 of the United Nations' 2030 agenda aims to revitalize the global partnership for sustainable development by promoting effective public-private and civil society cooperation to tackle worlds' greatest challenges. Leveraging their corporate citizenship, global firms like Deutsche Bank have the opportunity to create a positive impact – especially when they join forces with others to promote targeted initiatives that create shared value.

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As a corporate citizen, Deutsche Bank works to enable communities and economies around the world to prosper. Our initiatives have a strategic focus on education, social enterprise, and community, and we encourage our employees to underpin the bank's citizenship activities. Our education projects seek to enable young people to reach their full potential. We work with pioneering social enterprises to help drive positive change in society. And wherever Deutsche Bank does business, we seek to contribute to stronger and more inclusive communities. We do this together with like-minded partners and with our Plus You employee volunteering and giving community. Our Corporate Social Responsibility initiatives made a positive impact on the lives of 1.8 million people in 2018. In addition to making a difference on the ground, we seek to create large-scale change through advocacy and field leadership.

Regulation and Supervision

Our operations throughout the world are regulated and supervised by the relevant authorities in each of the jurisdictions where we conduct business. Such regulation relates to licensing, capital adequacy, liquidity, risk concentration, conduct of business as well as organizational and reporting requirements. It affects the type and scope of the business we conduct in a country and how we structure specific operations. In reaction to the 2008 financial crisis, the regulatory environment has undergone and is still undergoing significant changes.

Highlights

On November 23, 2016, the European Commission published a comprehensive package of reforms (referred to in the following as the “banking reform package”) to further strengthen the resilience of European Union banks. The proposals will incorporate various remaining elements of the regulatory framework agreed within the Basel Committee on Banking Supervision (“Basel Committee”) and the Financial Stability Board (“FSB”) to refine and supplement the global regulatory framework established by the Basel Committee, the so-called Basel Accords (Basel 1, 2 and 3). This includes more risk-sensitive capital requirements, in particular in the area of market risk, counterparty credit risk, and for exposures to central counterparties, methodologies that reflect more accurately the actual risks to which banks may be exposed, a binding leverage ratio, a binding net stable funding ratio, tighter regulation of large exposures, and a requirement for global systemically important institutions (“G-SIIs”), such as Deutsche Bank, to hold certain minimum levels of capital and other instruments which are capable of bearing losses in resolution (“Total Loss-Absorbing Capacity” or “TLAC”). Other proposed measures are aimed at improving banks' lending capacity to support the European Union economy and at further facilitating the role of banks in achieving deeper and more liquid European Union capital markets. On December 4, 2018, the European Parliament and the Council of the European Union reached a provisional political agreement with respect to the banking reform package. The banking reform package is expected to enter into force in the first half of 2019. While many provisions will not apply until 2021, certain parts, including the TLAC requirements, are expected to apply immediately when the provisions of the banking reform package enter into force. The banking reform package, when it enters into force, will likely affect our business by raising our regulatory capital and liquidity requirements and by leading to increased costs. The December 2017 Agreement could also affect our business by imposing higher capital charges when adopted into law.

The banking reform package includes amendments to the existing regulation on prudential requirements for credit institutions and investment firms, also referred to as the Capital Requirements Regulation (“CRR”), the directive on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms, also referred to as Capital Requirements Directive 4 (“CRD 4”), the European Union’s Regulation establishing Uniform Rules and a Uniform Procedure for the Resolution of Credit Institutions and certain Investment Firms in the Framework of a Single Resolution Mechanism and a Single Resolution Fund (the “SRM Regulation”) and the Bank Resolution and Recovery Directive (“BRRD”),

On December 18, 2018, a provisional agreement was reached on a further amendment of the CRR. The amendment relates to minimum loss coverage for non-performing exposures, creating a statutory prudential backstop against excessive future build-up of non-performing loans without sufficient loss coverage on banks’ balance sheets.

With respect to the United Kingdom’s decision to leave the European Union, if the United Kingdom and the European Union do not enter into a withdrawal agreement, the United Kingdom could leave the European Union as early as March 29, 2019. Deutsche Bank AG is in the process of applying for UK authorization to provide banking and other financial services in the United Kingdom. Deutsche Bank AG is planning to continue to provide banking and other financial services on a cross-border basis into the UK as well as through its London branch, which it will retain. Following the withdrawal of the United Kingdom from the European Union, Deutsche Bank AG expects that it will be subject to additional UK regulation and that its activities in the UK will be supervised and monitored by both the Prudential Regulatory Authority (“PRA”) and the Financial Conduct Authority (“FCA”). The PRA and FCA would likely impose new prudential and conduct requirements for Deutsche Bank AG.

The following sections present a description of the regulation and supervision of our business in our home market Germany under the European Union framework of regulation and in the United States.

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Regulation in Germany under the Regulatory Framework of the European Union

We are subject to comprehensive regulation under German law and regulations promulgated by the European Union which are directly applicable law in Germany.

The German Banking Act (Kreditwesengesetz) and the CRR are important sources of regulation for German banks with respect to prudential regulation, licensing requirements, and the business activities of financial institutions. In particular, the German Banking Act requires that an enterprise which engages in one or more of the activities categorized in the German Banking Act as “banking business” or “financial services” in Germany must be licensed as a credit institution (Kreditinstitut) or financial services institution (Finanzdienstleistungsinstitut), as the case may be. Deutsche Bank AG is licensed as a credit institution and is authorized to conduct banking business and to provide financial services.

Significant parts of the regulatory framework for banks in the European Union are governed by the CRR. The CRR includes requirements relating to regulatory capital, risk-based capital adequacy, monitoring and control of large exposures, consolidated supervision, leverage, liquidity and public disclosure, including Basel 3 standards.

Certain other requirements that apply to us, including those with respect to capital buffers, organizational and risk management requirements, are set forth in the German Banking Act and other German laws, partly implementing European Union directives such as CRD 4.

Deutsche Bank AG, headquartered in Frankfurt am Main, Germany, is the parent institution of Deutsche Bank Group. Under the CRR, Deutsche Bank AG, as credit institution and parent company, is responsible for regulatory consolidation of all subsidiary credit institutions, financial institutions, asset management companies and ancillary service undertakings. Generally, the bank regulatory requirements under the CRR and the German Banking Act apply both on a stand-alone and a consolidated basis. However, banks forming part of a consolidated group may receive a waiver with respect to the application of specific regulatory requirements on an unconsolidated basis if certain conditions are met. As of December 31, 2018, Deutsche Bank AG benefited from such a waiver, according to which Deutsche Bank AG needs to apply the requirements relating to own funds, large exposures, exposures to transferred credit risks, leverage and disclosure by institutions, as well as certain risk management requirements, only on a consolidated basis.

Capital Adequacy Requirements

Minimum Capital Adequacy Requirements (Pillar 1)

The minimum capital adequacy requirements for banks are primarily set forth in the CRR. The CRR requires German banks to maintain an adequate level of regulatory capital in relation to the total of their risk positions, referred to as total risk exposure amount or risk-weighted assets. Risk positions include credit risk positions, market risk positions and operational risk positions (including, among other things, risks related to certain external factors, as well as to technical errors and errors of employees). The most important type of capital for compliance with the capital requirements under the CRR is Common Equity Tier 1 capital. Common Equity Tier 1 capital primarily consists of share capital, retained earnings and other reserves, subject to certain regulatory adjustments. Another component of regulatory capital is Additional Tier 1 capital, which includes, for example, certain unsecured subordinated perpetual capital instruments and related share premium accounts. An important feature of Additional Tier 1 capital is that the principal amount of the instruments will be written down, or converted into Common Equity Tier 1 capital when the Common Equity Tier 1 capital ratio of the financial institution falls below a minimum of 5.125 % (or such higher level as the issuing bank may determine). Regulators may require an earlier conversion, for example for stress-testing purposes. Common Equity Tier 1 capital and Additional Tier 1 capital together constitute Tier 1 capital. An additional type of regulatory capital is Tier 2 capital which generally consists of long-term subordinated debt instruments. Tier 1 capital and Tier 2 capital together constitute own funds. Pursuant to the CRR, hybrid capital instruments that qualified as Tier 1 or Tier 2 capital under what is known as Basel 2.5 cease to qualify as such and will be gradually phased out through the end of 2021.

Under the CRR, banks are required to maintain a minimum ratio of Tier 1 capital to total risk exposure amount of 6 % and a minimum ratio of Common Equity Tier 1 capital to total risk exposure amount of 4.5 %. The minimum total capital ratio of own funds to total risk exposure amount is 8 %.

Capital Buffers

The German Banking Act also requires banks to build up a mandatory capital conservation buffer (Common Equity Tier 1 capital amounting to 2.5 % of total risk exposure amount), and authorizes the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht (“BaFin“)) to set a domestic counter-cyclical capital buffer for Germany (Common Equity Tier 1 capital of generally 0 % to 2.5 % of total risk exposure amount, or more in particular circumstances) during periods of high credit growth. In order to comply with the countercyclical capital buffer requirement, banks must calculate their institution-specific countercyclical capital buffer as the weighted average of the countercyclical capital buffers that apply to them in the jurisdictions where their relevant credit

exposures are located. Accordingly, the total countercyclical buffer requirement, if any, with which we need to comply also depends on the corresponding buffer requirements in other jurisdictions. In addition, the BaFin may require banks to build up a systemic risk buffer (Common Equity Tier 1 capital of between 1 % and 3 % of total risk exposure amount for all exposures and – in exceptional cases – up to 5 % for domestic and third-country exposures) to prevent and mitigate long term non-cyclical systemic or macro-prudential risks not otherwise covered by CRR/CRD 4. G-SIIs, such as Deutsche Bank, are subject to an additional capital buffer (Common Equity Tier 1 capital of between 1 % and 3.5 % of total risk exposure amount), which the BaFin determines for German banks based on a scoring system measuring the bank’s global systemic importance. The BaFin can also determine a capital buffer of Common Equity Tier 1 capital of up to 2 % of risk-weighted assets for other systemically important banks (so-called O-SIIs, such as Deutsche Bank) in Germany, based on criteria measuring, among others, the bank’s importance for the economy in Germany and the European Economic Area. The systemic risk buffer, the buffers for G-SIIs and the buffer for O-SIIs are generally not cumulative; only the highest of these buffers applies. If a bank fails to build up the required capital buffers, it will be subject to restrictions on the pay-out of dividends, share buybacks and discretionary compensation payments. Also, within the single supervisory mechanism (“SSM”), the European Central Bank (“ECB”) may require banks to maintain higher capital buffers than those required by the BaFin.

Leverage Ratio

The Basel 3 framework also proposes a non-risk based leverage ratio as a complement to the risk-based capital requirements. While the CRR, as currently in effect, does not require banks to comply with a specific leverage ratio, banks are required to report and publish their leverage ratios for a future assessment and calibration of the leverage ratio. The banking reform package (see “Highlights” above) includes a proposal to introduce a binding minimum leverage ratio requirement of 3 % of Tier 1 capital. In addition, in December 2017, the Basel Committee adopted a leverage ratio buffer for global systemically important banks (“G-SIBs”) (such as Deutsche Bank) to be applied from January 2022 onwards, which must be met with Tier 1 capital and is set at 50 % of a G-SIB’s risk-weighted capital buffer. In order for the Basel Committee’s standards to become binding on banks, they must be implemented in the laws of the European Union and the individual member jurisdictions.

Pillar 2 Capital Requirements and Guidance

Furthermore, the ECB may impose capital requirements on individual significant credit institutions which are more stringent than the statutory minimum requirements set forth in the CRR, the German Banking Act or the related regulations. Upon completion of the supervisory review and evaluation process (“SREP”) discussed in greater detail below, the competent supervisory authority makes an SREP decision in relation to each relevant bank, which may include specific capital and liquidity requirements for each affected bank. Any such additional bank-specific capital requirements resulting from the SREP are referred to as “Pillar 2” requirements that must be met with Common Equity Tier 1 capital in addition to the statutory minimum capital and buffer requirements. In addition, the ECB may decide following the SREP, to communicate to individual banks an expectation to hold a further Pillar 2 Common Equity Tier 1 capital add-on, the so-called Pillar 2 guidance. The ECB has stated that it expects banks to meet the Pillar 2 guidance although it is not legally binding and failure to meet the Pillar 2 guidance does not automatically have legal consequences. The competent supervisory authority may take a range of other measures based on the SREP outcome to address shortcomings in a bank’s governance and risk management processes or its capital or liquidity position, such as prohibiting dividend payments to shareholders or distributions to holders of regulatory capital instruments.

For details of Deutsche Bank’s regulatory capital, see “Management Report: Risk Report: Risk and Capital Performance” in our Annual Report 2018.

MREL Requirements

As discussed below under “Recovery and Resolution”, to ensure that European banks have a sufficient amount of liabilities with loss-absorbing capacity, they are required to meet minimum requirements for own funds and eligible liabilities (“MREL”) determined for each institution individually on a case-by-case basis. The banking reform package (see “Highlights” above) further intends to implement the FSB’s TLAC standard for G-SIBs (such as us) by introducing a new Pillar 1 MREL requirement for G-SIIs (the European equivalent term for G-SIBs). This new requirement is based on both risk-based and non-risk-based denominators and is expected to be set at the higher of 18 % of total risk exposure and 6.75 % of the leverage ratio exposure measure following a transition period. It can be met with Tier 1 or Tier 2 capital or debt that meets specific eligibility criteria. Deduction rules will apply for holdings by G-SIIs of TLAC instruments of other G-SIIs. In addition, the competent authorities will have the ability to impose an MREL add-on requirement on G-SIIs.

Limitations on Large Exposures

The CRR also contains the primary restrictions on large exposures, which limit a bank’s concentration of credit risks. The German Banking Act and the Large Exposure Regulation (Großkredit- und Millionenkreditverordnung) supplement the CRR. Under the CRR, our exposure to a customer and any customers affiliated with such customer is deemed to be a “large exposure” when the value of such exposure is equal to or exceeds 10 % of our eligible regulatory capital. All exposures to a single customer and any customers affiliated with such customer are aggregated for these purposes. In general, no large exposure may exceed 25 % of our eligible regulatory capital. “Eligible regulatory capital” for this purpose means the sum of Tier 1 capital and Tier 2 capital where the latter may not exceed one third of Tier 1 capital. If the customer is a credit institution or investment firm, the exposure is limited to the higher of 25 % of our eligible regulatory capital or € 150 million. Competent authorities may set a lower limit than € 150 million. For exposures in the trading book, the large exposure regime may give greater latitude, subject to an additional own funds requirement.

The banking reform package (see “Highlights” above) includes a proposal to restrict a bank’s exposures to a single counterparty to 25 % of its Tier 1 capital (instead of 25 % of the sum of its Tier 1 and Tier 2 capital) and to further limit exposures between banks designated as G-SIIs, such as Deutsche Bank, to 15 % of Tier 1 capital.

Liquidity Requirements

The CRR introduced a new liquidity coverage requirement intended to ensure that banks have an adequate stock of unencumbered high quality liquid assets that can be easily and quickly converted into cash to meet their liquidity needs for a 30-calendar day liquidity stress scenario. The required liquidity coverage ratio (“LCR”) is calculated as the ratio of a bank’s liquidity buffer to its net liquidity outflows. Also, banks must regularly report the composition of the liquid assets in their liquidity buffer to their competent authorities.

In addition, Basel 3 contains a proposal to introduce a net stable funding ratio (“NSFR”) to reduce medium- to long-term funding risks by requiring banks to fund their activities with sufficiently stable sources of funding over a one-year period. The CRR contains interim reporting requirements on stable funding but does not yet include substantive provisions relating to the NSFR. Among the banking reform package (see “Highlights” above) is a proposal to introduce a binding NSFR. According to this proposal, the NSFR is defined as the ratio of a bank’s available stable funding relative to the amount of required stable funding over a one-year period. According to the proposal, banks must maintain an NSFR of at least 100 %.

The ECB may impose on individual banks liquidity requirements which are more stringent than the general statutory requirements if the bank’s continuous liquidity would otherwise not be ensured.

Separation of Proprietary Trading Activities by Universal Banks

The German Separation Act provides that deposit-taking banks and their affiliates are prohibited from engaging in proprietary trading that does not constitute a service for others, high-frequency trading, and credit or guarantee transactions with hedge funds and comparable enterprises that are substantially leveraged, unless such activities are exempt or excluded, or in the case no such exemption or exclusion is available, is transferred to a separate legal entity, referred to as a financial trading institution (Finanzhandelsinstitut). The separation requirement applies if certain thresholds are exceeded, which is the case for us. In addition, the German Separation Act authorizes the BaFin to prohibit the deposit-taking bank and its affiliates, on a case-by-case basis, from engaging in market-making and other activities that are comparable to the activities prohibited by law, if these activities may put the solvency of the deposit-taking bank or any of its affiliates at risk. In the event that the BaFin orders such a prohibition, the respective activities must be discontinued or transferred to a separate financial trading institution. The financial trading institution may be established in the form of an investment firm or a bank and may be part of the same group as the deposit-taking bank. However, it must be economically and organizationally independent from the deposit-taking bank and its other affiliates, and it has to comply with enhanced risk management requirements. We have established a compliance and control framework to ensure that no prohibited activities are conducted. Deutsche Bank has not established a financial trading institution.

Anti-Financial Crime, Sanctions, Bribery and Corruption

Financial sector participants are required to take steps to prevent the abuse of the financial system through money laundering and other financial crime. The European Union has continually sought to strengthen its framework for anti-money laundering and combating the financing of terrorism, in line with international standards set by the Financial Action Task Force. Recent developments include the European Union's Fifth Anti-Money Laundering Directive, which has been in force since July 9, 2018 and is to be implemented in the Member States by January 2020. It aims to enhance transparency on beneficial ownership and reinforce the framework for the assessment of high-risk third countries, address other risk and further the cooperation between anti-money-laundering and prudential supervisors. Furthermore, the requirements set out in the German AML Act (Geldwäschegesetz) and German Banking Act apply to all business lines and infrastructure units as well as all subsidiaries and affiliates that undertake AML-relevant business and in which Deutsche Bank AG has a dominating influence.

We are required to comply with international sanctions, which are measures to protect national security interests or international law by countries, multilateral or regional organizations against certain countries, organizations or individuals restricting economic activity. In 2018, various sanctions laws were issued or changed requiring us to update policies, processes or name list screening or transaction filtering.

We are subject to bribery and corruption laws and regulations under the German Criminal Code and in the other countries in which we conduct business. The UK Bribery Act 2010 has extraterritorial impact and requires us to design and develop appropriate measures to mitigate bribery and corruption risk and to administer controls and safeguards to mitigate such risks.

Data Protection and Cyber Risk

We have to comply with all applicable data protection laws in the countries in which we operate. The regulation on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, also referred to as the General Data Protection Regulation ("GDPR"), became applicable in the European Union on

May 25, 2018. It relates to data protection and privacy rights of individuals within the European Union and addresses the export of personal data to other jurisdictions. The GDPR primarily aims at giving individuals control over their personal data and to unifying the regulatory environment for cross-border business. Superseding the 1995 Data Protection Directive, the GDPR contains provisions and requirements pertaining to the processing of personal data of individuals and also applies to businesses inside the European Union that are processing personal data. The regulation furthermore applies to businesses outside of the European Union if goods or services are offered to data subjects in the European Union, or if the behavior of data subjects in the European Union is being monitored. The GDPR imposes compliance obligations and grants broad enforcement powers to supervisory authorities, including the potential to levy significant fines for non-compliance.

Under the German Banking Act and the BaFin's Minimum Requirements for Risk Management for Banks (Mindestanforderungen an das Risikomanagement) information security needs to be an integral part of a financial institution's IT strategy and risk management. The BaFin requires that financial institutions establish a comprehensive information and cyber security program, define standards, implement controls and adhere to their resulting security policies and standards in accordance with evolving business requirements, regulatory guidance, and an emerging threat landscape. Information security risk management is part of vendor risk management for any procurement if information technology or outsourcing activity include the use of new technologies like cloud services. Information security risk (also referred to as cyber risk) is a component of operational risk assessed in the context of the SREP under Guidelines on Information and Communication Technology Risk Assessment issued by the European Banking Authority, which expects financial institutions to protect the confidentiality, integrity, and availability of customer data and information assets.

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Remuneration Rules

Under the German Banking Act and the German Credit Institution Remuneration Regulation (Institutsvergütungsverordnung), we are subject to certain restrictions on the remuneration we pay our management board members and employees. These remuneration rules implement requirements of the CRD 4 and impose a cap on bonuses. Pursuant to this cap, the variable remuneration for management board members and employees must not exceed the fixed remuneration. The variable remuneration may be increased to twice the management board member's or employee's fixed remuneration if expressly approved by the shareholders' meeting with the required majority. In addition, we are obliged to identify individuals who have a material impact on our risk profile ("material risk takers"). Such material risk takers are subject to additional rules, such as the requirement that at least 40 % to 60 % of the variable remuneration granted to them must be on a deferred basis. The deferral period must be at least three to five years. Also at least 50 % of the variable remuneration for material risk takers must be paid in the form of instruments that adequately reflect the credit quality of the bank, such as shares or instruments linked to shares. Finally, we are required to comply with certain disclosure requirements relating to the remuneration we pay to, and our remuneration principles in respect of, our material risk takers and other affected employees.

For details of Deutsche Bank's remuneration system, see "Management Report: Compensation Report" in our Annual Report 2018.

Deposit Protection and Investor Compensation in Germany

The Deposit Protection Act and the Investor Compensation Act

The German Deposit Protection Act (Einlagensicherungsgesetz) and the German Investor Compensation Act (Anlegerschädigungsgesetz) provide for a mandatory deposit protection and investor compensation system in Germany, based on a European Union directive on deposit guarantee schemes ("DGS Directive") and a European Union

directive on investor compensation schemes.

The German Deposit Protection Act requires that each German bank participates in one of the statutory government-controlled deposit protection schemes (Entschädigungseinrichtungen). The Entschädigungseinrichtung deutscher Banken GmbH acts as the deposit protection scheme for private sector banks such as Deutsche Bank, collects and administers the contributions of the member banks, and settles any compensation claims of depositors in accordance with the German Deposit Protection Act.

Under the German Deposit Protection Act, deposit protection schemes are generally liable for obligations resulting from deposits denominated in any currency in an amount of up to € 100,000 per depositor and bank. Certain depositors, such as banks, insurance companies, investment funds and governmental bodies, are excluded from coverage.

Deposit protection schemes are financed by annual contributions of the participating banks proportionate to their potential liabilities, depending on the amount of its covered deposits and the degree of risk the bank is exposed to. A target level of 0.8 % of the total covered deposits of the participating banks is supposed to be reached by July 3, 2024. Deposit protection schemes may also levy special contributions if required to settle compensation claims.

Deposit protection schemes will be required to contribute to bank resolution costs where resolution tools are used. The contribution made by the deposit protection scheme is limited to the compensation it would have to pay if the affected bank had become subject to insolvency proceedings. Furthermore, deposit protection schemes may provide funding to its participating banks to avoid their failure under certain circumstances.

Under the German Investor Compensation Act, in the event that the BaFin ascertains a compensation case, Entschädigungseinrichtung deutscher Banken GmbH as our deposit protection scheme is also required to compensate 90 % of the aggregate claims of each covered creditor arising from securities transactions denominated in euro or in a currency of any other European Union Member State up to an amount of the equivalent of € 20,000. Many financial sector participants such as banks, insurance companies, investment funds, governmental bodies or medium-sized and large corporations do not benefit from this coverage.

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European Deposit Insurance Scheme

The European Union is still aiming for a common European Deposit Insurance Scheme (“EDIS”) based upon a proposal of the European Commission originally published in 2015. EDIS is still under discussion at the European Union level and the ultimate impact on us is uncertain.

Voluntary Deposit Protection System

Liabilities to creditors that are not covered by a statutory compensation scheme may be covered by the Deposit Protection Fund (Einlagensicherungsfonds) set up by the Association of German Banks (Bundesverband deutscher Banken e.V.) of which Deutsche Bank AG is a member. The Deposit Protection Fund protects deposits, i.e., generally credit balances credited to an account or resulting from interim positions which the bank is required to repay, subject to certain exclusions, up to an amount equal to 20 % of the bank’s own funds (Eigenmittel) as further specified in the Deposit Protection Fund’s by-laws. This limit will be reduced to 15 % from January 1, 2020 onwards and to 8.75 % from January 1, 2025 onwards.

The financial resources of the Deposit Protection Fund are funded by contributions of the participating banks. If the resources of the Fund are insufficient, banks may be required to make special contributions. If one or more German

banks are in financial difficulties, we may participate in their restructuring even where we have no business relationship or strategic interest, in order to avoid making special contributions to the Deposit Protection Fund in case of an insolvency of such bank or banks, or we may be required to make such special contributions.

Market Conduct, Investor Protection and Infrastructure Regulation

Under the German Securities Trading Act (Wertpapierhandelsgesetz), the BaFin regulates and supervises securities trading, including the provision of investment services, in Germany. The German Securities Trading Act contains, among other things, disclosure and transparency rules for issuers of securities that are listed on a German exchange and organizational requirements as well as rules of conduct which apply to all businesses that provide investment services. Investment services include, in particular, the purchase and sale of securities or derivatives for others and the intermediation of transactions in securities or derivatives as well as investment advice. The BaFin has broad powers to investigate businesses providing investment services to monitor their compliance with the organizational requirements, rules of conduct and reporting requirements. In addition, the German Securities Trading Act requires an independent auditor to perform an annual audit of the investment services provider's compliance with its obligations under the German Securities Trading Act.

A related area is the Market Abuse Regulation ("MAR") which establishes a common European Union framework for, inter alia, insider dealing, the public disclosure of inside information, market manipulation, and managers' transactions. The German Securities Trading Act, which had contained rules on market abuse prior to the entering into force of the MAR, continues to supplement the MAR in this respect, for example by providing for sanctions in case of violations of the MAR.

In addition, the revised Markets in Financial Instruments Directive ("MiFID 2"), implemented primarily through amendments to the German Securities Trading Act, and the new Markets in Financial Instruments Regulation ("MiFIR") became applicable on January 3, 2018. Their objectives are greater regulation and oversight of financial firms providing investment services or activities in the European Union by covering additional markets and instruments, the extension of pre- and post-trade transparency rules from equities to all financial instruments, greater restrictions on operating trading platforms, and greater sanctioning powers. The trading venues under supervision now also include organized trading facilities. In addition, MiFID 2/MiFIR, introduced a trading obligation for those OTC derivatives which are subject to mandatory clearing and which are sufficiently standardized, and new investor protection rules that significantly impact the way investment firms distribute products. The Regulation on Key Information Documents or Packaged Retail and Insurance-based Investment Products (PRIIPs) applies since January 1, 2018. It focuses on disclosure and transparency requirements when advising on or selling retail structured products and other complex and packaged investment products and aims at increasing investor protection.

Beyond the infrastructure-related provisions of MiFID 2 and MiFIR, market infrastructure has been the focus of other regulatory initiatives of the European Union that are relevant for Deutsche Bank. The Regulation on Transparency of Securities Financing Transaction aims at increasing transparency and reducing risks associated with such transactions. The regulation requires that repos, securities lending transactions and transactions with equivalent effect and margin lending transactions be reported to trade repositories and requires risk disclosures and consent before assets are reused or re-hypothecated. For the OTC derivatives markets, the European Regulation on OTC Derivatives, Central Counterparties and Trade Repositories, also referred to as European Market Infrastructure Regulation ("EMIR"), pursues the goals of reducing system, counterparty and operational risk and increase transparency in the OTC derivatives markets. The regulation introduced requirements for standardized over-the-counter derivatives, such as central clearing, margining, portfolio reconciliation or reporting to trade repositories.

In addition, the European Union's Regulation on Financial Benchmarks seeks to ensure the integrity and accuracy of

indices used as benchmarks for financial instruments and contracts, and prevent their manipulation. European Union-regulated banks, investment firms, fund managers and certain other supervised entities are only permitted to use benchmarks provided in accordance with the regulation. Benchmark administrators in the European Union are required to obtain authorization or registration, and are subject to rules and oversight regarding their organization, governance and conduct. Benchmarks provided by non-EU administrators are permissible under certain conditions.

Payment Services Regulation

Payment services in Germany are governed by the Payment Services Directive II (“PSD II”) as transposed into German law by the Payment Services Supervision Law (Zahlungsdienstenaufsichtsgesetz, “ZAG”). Payment services regulation is aimed at increasing competition for payment services and providing a level playing field by harmonizing consumer protection and rights and obligations of payment services providers and users within the European Union. The PSD II and the ZAG provide the legal framework for the rapidly progressing digitalization in payment services and promote consistent interpretation and application of the provisions throughout the European Union.

Legal Requirements relating to Financial Statements and Audits

As required by the German Commercial Code (Handelsgesetzbuch), Deutsche Bank AG prepares its non-consolidated financial statements in accordance with German GAAP. Deutsche Bank Group’s consolidated financial statements are prepared in accordance with International Financial Reporting Standards (“IFRS”), and our compliance with capital adequacy requirements and large exposure limits is determined solely based upon such consolidated financial statements.

Under German law, Deutsche Bank AG is required to be audited annually by a certified public accountant (Wirtschaftsprüfer). Deutsche Bank AG’s auditor is appointed each year at the annual shareholders’ meeting. However, the supervisory board mandates the auditor and supervises the audit. The BaFin and the Deutsche Bundesbank (“Bundesbank”), the German central bank, must be informed of the appointment and the BaFin may reject the auditor’s appointment. The German Banking Act requires that a bank’s auditor inform the BaFin and the Bundesbank of any facts that come to the auditor’s attention which would lead it to refuse to certify or to limit its certification of the bank’s annual financial statements or which would adversely affect the bank’s financial position. The auditor is also required to notify the BaFin and the Bundesbank in the event of a material breach by management of the articles of association or of any other applicable law. The auditor is required to prepare a detailed and comprehensive annual audit report (Prüfungsbericht) for submission to the bank’s supervisory board, the BaFin and the Bundesbank. The BaFin and the Bundesbank share their information with the ECB. In addition to the statutory audit directive and its amendment that has been implemented into national law, Deutsche Bank is also subject to the European Union’s Regulation on Specific Requirements regarding Statutory Audit of Public-Interest Entities which includes requirements for mandatory audit firm rotation and restrictions on non-audit services.

Banking Supervision under the Single Supervisory Mechanism

Under the European Union’s system of financial supervision referred to as the single supervisory mechanism (“SSM”), the ECB is the primary supervisor of all systemically important or significant credit institutions (such as Deutsche Bank AG) and their banking affiliates in the relevant Member States. The competent national authorities supervise the remaining, less significant banks under the oversight of the ECB. As a result, Deutsche Bank AG is supervised by the ECB, the BaFin and the Bundesbank.

With respect to us and other significant credit institutions, the ECB is the primary supervisor and is responsible for most tasks of prudential supervision, such as compliance with regulatory requirements concerning own funds, large exposure limits, leverage, liquidity, securitizations, corporate governance, business organization and risk management requirements. The ECB carries out its day-to-day supervisory functions through a joint supervisory team (“JST”)

established for Deutsche Bank Group. The JST is led by the ECB and comprises staff from the ECB and national supervisory authorities, including the BaFin and the Bundesbank. In addition, and regardless of whether an institution is significant or not, the ECB is responsible for issuing new licenses to credit institutions and for assessing the acquisition and increase of significant participations (also referred to as qualifying holdings) in credit institutions established in those Member States of the European Union that participate in the SSM and where notification of such changes must be filed.

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The BaFin is our principal supervisor for regulatory matters with respect to which we are not supervised by the ECB. These include business conduct in the securities markets, in particular when providing investment services to clients, anti-money laundering, terrorist financing and payment services, as well as certain special areas of bank regulation, such as those related to the issuance of covered bonds (Pfandbriefe) and the supervision of German home loan banks (Bausparkassen) with regard to certain regulatory requirements specifically applicable to such home loan banks. Generally, the BaFin also supervises us with respect to those requirements under the German Banking Act that are not based upon European law. The Bundesbank supports the BaFin and the ECB and closely cooperates with them. The cooperation includes the ongoing review and evaluation of reports submitted by us and of our audit reports as well as assessments of the adequacy of our capital base and risk management systems. The ECB, the BaFin and the Bundesbank receive comprehensive information from us in order to monitor our compliance with applicable legal requirements and to obtain information on our financial condition.

Supervisory Review and Evaluation Process

For significant institutions such as Deutsche Bank, the JST conducts the supervisory review and evaluation process (or “SREP”) for an ongoing assessment of risks, governance arrangements and the capital and liquidity situation. The SREP requires that the JSTs review the arrangements, strategies, processes and mechanisms of supervised banks on a regular basis, in order to evaluate risks to which these banks are or might be exposed, risks they could pose to the financial system, and risks revealed by stress testing.

The SREP framework consists of a business model analysis, an assessment of internal governance and institution-wide control arrangements, an assessment of risks to capital and adequacy of capital to cover these risks; and an assessment of risks to liquidity and adequacy of liquidity resources to cover these risks. The SREP can result in Pillar 2 capital and liquidity requirements or guidance for the relevant institution (see above “Pillar 2 Capital Requirements and Guidance”).

Audits, Investigations and Enforcement

Investigations and Supervisory Audits

The ECB and the BaFin may conduct audits of banks on a discretionary basis, as well as for cause. In particular, the ECB may audit our compliance with requirements with respect to which it supervises us, such as those set forth in CRR/CRD 4. The BaFin may also decide to audit our compliance with requirements with respect to which it supervises us, such as those relating to business conduct in the securities markets and the regulation of anti-money laundering, to counter terrorist financing and payment services, as well as certain special areas of bank regulation, such as those related to the issuance of covered bonds and the supervision of German home loan banks.

The ECB as well as the BaFin may require a bank to furnish information and documents in order to ensure that the bank is complying with applicable bank supervisory laws. The ECB and the BaFin may conduct investigations

without having to state a reason therefor. Such investigations may also take place at a foreign entity that is part of a bank's group for regulatory purposes. Investigations of foreign entities are limited to the extent that the law of the jurisdiction where the entity is located restricts such investigations.

The ECB and the BaFin may attend meetings of a bank's supervisory board and shareholders meetings. They also have the authority to require that such meetings be convened.

Supervisory and Enforcement Powers

The ECB has a wide range of enforcement powers in the event it discovers any irregularities concerning adherence to requirements with respect to which it supervises us.

It may, for example,

- impose additional own funds or liquidity requirements in excess of statutory minimum requirements;
- restrict or limit a bank's business;
- require the cessation of activities to reduce risk;
- require a bank to use net profits to strengthen its own funds;
- restrict or prohibit dividend payments to shareholders or distributions to holders of Additional Tier 1 instruments; or
- remove the members of the bank's management or supervisory board members from office.

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To the extent necessary to carry out the tasks granted to it, the ECB may also require national supervisory authorities to make use of their powers under national law. If these measures are inadequate, the ECB may revoke the bank's license. Furthermore, the ECB has the power to impose administrative penalties in case of breaches of directly applicable European Union laws, such as the CRR, or of applicable ECB regulations and decisions. Penalties imposed by the ECB may amount to up to twice the amount of profits gained or losses avoided because of the violation, or up to 10 % of the total annual turnover of the relevant entity in the preceding business year or such other amounts as may be provided for in relevant European Union law. In addition, where necessary to carry out the tasks granted to it, the ECB may also require that the BaFin initiate proceedings to ensure that appropriate penalties are imposed on the affected bank.

The BaFin also retains a wide range of enforcement powers. As discussed above, it may take action if instructed by the ECB in connection with supervisory tasks granted to the ECB. With respect to supervisory tasks remaining with the BaFin, the BaFin may take action upon its own initiative. In particular, if a bank is in danger of defaulting on its obligations to creditors, the BaFin may take emergency measures to avert default. These emergency measures may include:

- issuing instructions relating to the management of the bank;
- prohibiting the acceptance of deposits and the extension of credit;
- prohibiting or restricting the bank's managers from carrying on their functions;
- prohibiting payments and disposals of assets;
- closing the bank's customer services; and
- prohibiting the bank from accepting any payments other than payments of debts owed to the bank.

The BaFin may also impose administrative pecuniary penalties under the German Banking Act and other German laws. Penalties under the German Banking Act may amount to generally up to € 5 million or, in certain cases,

€ 20 million, depending of the type of offense. If the economic benefit derived from the offense is higher, the BaFin may impose penalties of up to 10 % of the net turnover of the preceding business year or twice the amount of the economic benefit derived from the violation.

Finally, violations of the German Banking Act may result in criminal penalties against the members of the Management Board or senior management.

Recovery and Resolution

Germany participates in the European Union's single resolution mechanism ("SRM"), which centralizes at a European level the key competences and resources for managing the failure of banks in Member States of the European Union participating in the banking union. The SRM is based on the SRM Regulation and the BRRD, which was implemented in Germany through the German Recovery and Resolution Act (Sanierungs- und Abwicklungsgesetz). In addition, the German Resolution Mechanism Act (Abwicklungsmechanismengesetz) adapted German bank resolution laws to the SRM.

Under the SRM, broad resolution powers with respect to banks domiciled in the participating Member States are granted to the Single Resolution Board ("SRB") as the central European resolution authority and to the competent national resolution authorities. Resolution powers in particular include the power to reduce, including to zero, the nominal value of shares, or to cancel shares outright, and to write down certain eligible subordinated and unsubordinated unsecured liabilities, including to zero, or convert them into equity (commonly referred to as "bail-in").

For a bank directly supervised by the ECB, such as Deutsche Bank, the SRB draws up the resolution plan, assesses the bank's resolvability and may require legal and operational changes to the bank's structure to ensure its resolvability. In the event that a bank is failing or likely to fail and certain other conditions are met, in particular where there is no reasonable prospect that any alternative private sector measures would prevent the failure and resolution measures are necessary in the public interest, the SRB is responsible for adopting a resolution scheme for resolving the bank pursuant to the SRM Regulation. The European Commission and, to a lesser extent, the Council of the European Union, have a role in endorsing or objecting to the resolution scheme proposed by the SRB. The resolution scheme would be addressed to and implemented by the competent national resolution authorities (the BaFin in Germany).

Resolution measures that could be imposed upon a failing bank may include a range of measures including the transfer of shares, assets or liabilities of the bank to another legal entity, the reduction, including to zero, of the nominal value of shares, the dilution of shareholders of a failing bank or the cancellation of shares outright, or the amendment, modification or variation of the terms of the bank's outstanding debt instruments, for example by way of deferral of payments or a reduction of the applicable interest rate. Furthermore, by way of a "bail-in", certain liabilities may be written down, including to zero, or converted into equity after the bank's regulatory capital has been exhausted.

To ensure that resolution measures can be effectively taken, contractual obligations governed by the laws of a non-EU country or that are subject to jurisdiction outside the European Union are required to include contractual provisions that ensure that the relevant obligation can be bailed in. In the case of financial contracts governed by the laws of a non-EU country or that are subject to jurisdiction outside the European Union, stay acceptance clauses need to be included.

To ensure sufficient availability of liabilities with loss-absorbing capacity that could be bailed in, the SRM Regulation and the German Recovery and Resolution Act introduced a requirement for banks to meet minimum requirements for

own funds and eligible liabilities (“MREL”). The required level of MREL is determined by the competent resolution authorities for each supervised bank individually on a case-by-case basis. MREL is set by the Member State resolution authority on an institution-by-institution basis, depending on preferred resolution strategy. In the case of Deutsche Bank AG, MREL is determined by the SRB. While there is no minimum level of MREL, the BRRD and a delegated regulation set out criteria which the resolution authority must consider when setting it.

The banking reform package (see “Highlights” above) intends to implement the FSB’s TLAC standard for G-SIBs by introducing a new “Pillar 1” MREL requirement for G-SIIs. This proposed new requirement is based on both risk-based and non-risk-based denominators and is expected to be set at the higher of 18 % of total risk exposure and 6.75 % of the leverage ratio exposure measure following a transition period. It can be met with Tier 1 or Tier 2 capital instruments or debt that meets specific eligibility criteria. In addition, the competent authorities will have the ability to impose an MREL add-on requirement on G-SIIs.

We anticipate that G-SIIs will need to predominantly rely on capital instruments or eligible subordinated debt for this purpose. Effective January 1, 2017, the German Banking Acts provided for a new class of statutorily subordinated debt securities that rank as senior non-preferred below the bank’s other senior liabilities (but in priority to the bank’s contractually subordinated liabilities, such as those qualifying as Tier 2 instruments). Following a harmonization effort by the European Union implemented in Germany effective July 21, 2018, banks are permitted to decide if a specific issuance of eligible senior debt will rank as senior non-preferred debt or as senior preferred debt.

The SRB is charged with administering the Single Resolution Fund, a pool of money which is financed by bank levies raised at national level and intended to reach a target level of 1 % of insured deposits of all banks in Member States participating in the SRM by the end of 2023. It will be used for resolving failing banks after other options, such as the bail-in tool, have been exhausted. In line with the German Recovery and Resolution Act, public financial support for a failing bank should only be used as a last resort, after having assessed and exploited, to the maximum extent possible, resolution measures set forth in the SRM Regulation and the German Recovery and Resolution Act, including the bail-in tool.

In addition, a German bank could become subject to a stabilization plan or reorganization proceedings under the German Credit Institution Reorganization Act (Gesetz zur Reorganisation von Kreditinstituten).

Regulation in the European Economic Area and Brexit

Since 1989 the European Union has worked to create a single European Union-wide market with almost no internal barriers on banking and financial services. To this end, the European Union pursues common standards of laws and regulations to create consistency across the internal market and reduce compliance and regulatory burdens for businesses operating on a cross-border basis. The Agreement on the European Economic Area extends this single market to Iceland, Liechtenstein and Norway. These non-EU members of the European Economic Area have agreed to enact legislation similar to that passed in the European Union in many areas. Within this market, our branches generally operate under the so-called “European Passport”. Under the European Passport, our branches are subject to regulation and supervision primarily by the ECB and the BaFin. Similarly, we also provide cross-border services in the European Economic Area under the “European Passport” directly without intermediation of branches. To the extent that activities are carried out within its jurisdiction, the authorities of the host country supervise the conduct of such activities. This includes, for example, rules on treating clients fairly and rules governing a bank’s conduct in the securities market.

To prepare for the departure of the United Kingdom from the European Union Deutsche Bank AG is in the process of applying for UK authorization to continue to undertake regulated activity in the UK (previously undertaken pursuant to the European Passport provisions). Deutsche Bank AG expects that it will be subject to additional UK regulation and that its activities in the UK will be supervised and monitored by both the PRA and the FCA. The PRA and FCA

would likely impose new prudential and conduct requirements for Deutsche Bank AG.

Regulation and Supervision in the United States

Our operations are subject to extensive federal and state banking, securities and derivatives regulation and supervision in the United States. We engage in US banking activities directly through our New York branch. We also control US banking organization subsidiaries, including DB USA Corporation and Deutsche Bank Trust Company Americas (“DBTCA”), and US broker-dealers, such as Deutsche Bank Securities Inc., US nondeposit trust companies and nonbanking subsidiaries. We hold our US subsidiaries through two intermediate holding companies, DB USA Corporation, through which our US banking subsidiaries and the large majority of our other US subsidiaries are held, and DWS USA Corporation, through which our US asset management subsidiaries are held.

In 2010, the United States enacted the Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Dodd-Frank Act”), which provides a broad framework for significant regulatory changes that extend to almost every area of US financial regulation. While rulemaking in respect of many of the provisions of the Dodd-Frank Act has already taken place, full implementation of the Dodd-Frank Act will require further detailed rulemaking and uncertainty remains about the final details, timing and impact of some rules. Some existing regulations implementing the Dodd-Frank Act are undergoing tailoring as part of the implementation process. In addition, the substance and impact of the Dodd-Frank Act may be affected by subsequent legislation and changes in the US political landscape.

The Dodd-Frank Act provisions known as the “Volcker Rule” limit the ability of banking entities and their affiliates to engage as principal in certain types of proprietary trading and to sponsor or invest in private equity or hedge funds or similar funds (“covered funds”), subject to certain exclusions and exemptions. In the case of non-US banking entities such as Deutsche Bank AG, these exemptions permit certain activities conducted outside the United States, provided that certain criteria are satisfied. The Volcker Rule also limits the ability of banking entities and their affiliates to enter into certain transactions with covered funds with which they or their affiliates have certain relationships. The Volcker Rule also requires banking entities to establish comprehensive compliance programs designed to help ensure and monitor compliance with restrictions under the Volcker Rule. In May 2018, the US regulatory agencies with authority over the Volcker Rule issued a notice of proposed rulemaking to amend the Volcker Rule. The proposed amendments are intended to provide banking entities with greater clarity and certainty about the scope of the rule, improve effective allocation of compliance resources and improve the ability of the agencies to examine for, and make supervisory assessments regarding, compliance with the Volcker Rule. The timing of the adoption of final amended Volcker Rule regulations, and their content, is currently unclear.

The Dodd-Frank Act also provides regulators with tools to provide greater capital, leverage and liquidity requirements and other prudential standards, particularly for financial institutions that pose significant systemic risk. US regulators are also able to restrict the size and growth of systemically significant non-bank financial companies and large interconnected bank holding companies. US regulators are also required to impose bright-line debt-to-equity ratio limits on financial companies that the Financial Stability Oversight Council determines pose a grave threat to financial stability if it determines that the imposition of such limits is necessary to minimize the risk.

With respect to prudential standards, in February 2014, the Federal Reserve Board adopted rules that set forth how the US operations of certain foreign banking organizations (“FBOs”), such as Deutsche Bank, are required to be structured, as well as the enhanced prudential standards that apply to our US operations (the “FBO Rules”). Under the FBO Rules, as of July 1, 2016, a large FBO with US\$ 50 billion or more in US non-branch assets, such as Deutsche Bank, was required to establish or designate a separately capitalized top-tier US intermediate holding company (an “IHC”) that

would hold substantially all of the FBO's ownership interests in its US subsidiaries. The Federal Reserve Board may permit an FBO subject to the US IHC requirement to establish or designate multiple US IHCs upon written request. On July 1, 2016, we designated DB USA Corporation as our IHC. In March 2018, we completed the partial initial public offering of our Asset Management division, consolidating these activities in DWS Group GmbH & Co. KGaA, in which we retain approximately 80 % of the shares. In April 2018, DWS USA Corporation was formed as a subsidiary of DWS Group GmbH & Co. KGaA, and, following receipt of Federal Reserve Board approval, we designated it as our second IHC, through which our US asset management subsidiaries are held. As of the date of their designation or formation, they each became subject, on a consolidated basis, to the risk-based and leverage capital requirements under the US Basel 3 capital framework, capital planning and stress testing requirements (on a phased-in basis), US liquidity buffer requirements and other enhanced prudential standards comparable to those applicable to top-tier US bank holding companies of a similar size. Supplementary leverage ratio requirements applicable to DB USA Corporation took effect beginning in January 2018 and were applicable to DWS USA Corporation upon its formation.

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On October 31, 2018, the Federal Reserve Board, Federal Deposit Insurance Corporation ("FDIC") and Office of the Comptroller of the Currency issued notices of proposed rulemaking that would tailor how certain capital and liquidity requirements and other prudential standards would apply to large US banking organizations. The proposals would assign US banking organizations with \$100 billion or more in total consolidated assets to one of four categories based on their size and other risk-based indicators, and an institution's assigned category would determine the capital and liquidity requirements and enhanced prudential standards to which it would be subject. The proposals expressly would not apply to FBOs, including their US IHCs, or their US operations, but the Federal Reserve noted that it plans to issue a separate tailoring proposal relating to FBOs and their US operations.

The Federal Reserve Board has the authority to examine an IHC, such as DB USA Corporation and DWS USA Corporation, and its subsidiaries, as well as US branches and agencies of FBOs, such as our New York branch. An FBO's US branches and agencies are not held beneath an IHC; however, the US branches and agencies of the FBO are subject to certain liquidity requirements, as well as other specific enhanced prudential standards, such as risk management and, under certain circumstances, asset maintenance requirements. Additionally, the FBO Rules also placed requirements on the FBO itself related to the adequacy and reporting of the FBO's home country capital and stress testing regime.

On June 14, 2018, the Federal Reserve Board adopted requirements relating to single counterparty credit limits that apply to an FBO's combined US operations and its IHCs. Our IHCs will each be prohibited from having net credit exposure to a single unaffiliated counterparty in excess of 25 percent of each IHC's tier 1 capital beginning on July 1, 2020. In addition, our combined US operations (including our IHCs and our New York branch) would become separately subject to similar restrictions beginning January 1, 2020 unless Deutsche Bank AG certifies compliance with a home country large exposure regime that is consistent with the Basel large exposure framework.

In addition, the Federal Reserve Board proposed but has not adopted an "early remediation" framework under which it would implement prescribed restrictions and penalties against the FBO and its US operations, such as restrictions on the ability of the FBO and its US operations to make discretionary compensation payments to certain of its officers and directors, if the FBO and/or its US operations do not meet certain risk-based capital, leverage, liquidity, stress testing or other risk management requirements, and would authorize the termination of US operations under certain circumstances.

As a bank holding company with assets of US\$ 250 billion or more, Deutsche Bank AG is required under Title I of the Dodd-Frank Act, as amended, and the implementing regulations therefor to prepare and submit periodically to the

Federal Reserve Board and the FDIC a plan for the orderly resolution of its subsidiaries and operations in the event of future material financial distress or failure (the “US Resolution Plan”). For foreign-based companies subject to these resolution planning requirements such as Deutsche Bank AG, the US Resolution Plan relates only to subsidiaries, branches, agencies and businesses that are domiciled in or whose activities are carried out in whole or in material part in the United States.

Deutsche Bank AG filed its most recent US Resolution Plan in June 2018. The US Resolution Plan describes the single point of entry strategy for our US Material Entities, Core Business Lines, Critical Operations and prescribes that DB USA Corporation, our single US intermediate holding company as of December 31, 2017, would provide support to its US Material Entity subsidiaries and ensure their solvent wind-down outside of applicable resolution proceedings. In December 2018, Deutsche Bank AG received written regulatory feedback from the Federal Reserve and FDIC, which found that Deutsche Bank’s US Resolution Plan had no deficiencies but identified one shortcoming in the plan, associated with governance mechanisms and related escalation triggers. Deutsche Bank is required to submit a response to its December 2018 feedback letter by April 5, 2019. Deutsche Bank’s response will discuss the remediation of the shortcoming as well as enhancements of its resolution capabilities. Both the remediation of the shortcoming and enhancements must be completed prior to the submission of our next US Resolution Plan, which is currently expected to be due on July 1, 2020.

DB USA Corporation was subject to the Federal Reserve Board’s Comprehensive Capital Analysis and Review (“CCAR”) for 2018. On June 28, 2018, the Federal Reserve Board publicly indicated that it did not object to DB USA Corporation’s 2018 capital plan on a quantitative basis, but that it did object for qualitative reasons. As a result of the Federal Reserve’s objection, DB USA Corporation may not make any capital distribution unless the Federal Reserve has indicated in writing its non-objection to the distribution. DB USA Corporation’s stressed Common Equity Tier 1 capital ratio was forecast by the Federal Reserve Board to fall to as low as 12.2 % under the supervisory severely adverse scenario. This hypothetical stressed ratio would be substantially above the minimum required ratio of 4.5 %. Stress testing results are based on hypothetical adverse scenarios and should not be viewed or interpreted as forecasts of expected outcomes or capital adequacy or of the actual financial condition of DB USA Corporation. DB USA Corporation will make its next capital plan submission to the Federal Reserve Board in April 2019, at which time DWS USA Corporation will submit its initial capital plan to the Federal Reserve Board.

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In September 2014, the Federal Reserve Board and other US regulators approved a final rule implementing liquidity coverage ratio (“LCR”) requirements for large US banking holding companies and certain of their subsidiary depository institutions that are generally consistent with the Basel Committee’s revised Basel 3 liquidity standards. DB USA Corporation and DBTCA became subject to the full LCR requirements on April 1, 2017 and DWS USA Corporation became subject to LCR requirements on a phased-in basis following its formation in April 2018.

On June 1, 2016, the Federal Reserve Board and other US regulators proposed rules implementing the second element of the Basel 3 liquidity framework, the net stable funding ratio (“NSFR”). Under the proposed rules, DB USA Corporation, DWS USA Corporation and DBTCA would be subject to the full NSFR; however, this proposal has yet to be finalized and, accordingly, such entities are not currently subject to the proposed requirements.

On December 15, 2016, the Federal Reserve Board adopted final rules that implement a US version of the FSB’s TLAC standard in the United States. The final rules require, among other things, the US IHCs of non-US G-SIBs, including DB USA Corporation and DWS USA Corporation, to maintain a minimum TLAC amount, and separately require them to maintain a minimum amount of eligible long-term debt. Under the final rules, the required TLAC amount and the ability or inability of the IHC to count long-term debt issued externally towards the requirements varies depending on the G-SIB’s planned resolution strategy. DB USA Corporation and DWS USA Corporation are

each considered a “non-resolution covered IHC”, which means that they are intended, under the planned resolution strategy of their G-SIB parent (Deutsche Bank AG), to continue to operate outside of resolution proceedings while the G-SIB parent is subject to a bail-in under the applicable European resolution regime. The final rules require a “non-resolution covered IHC” to maintain, beginning in 2019, (i) internal minimum TLAC of at least 16 % of its risk-weighted assets, 6 % of its Basel 3 leverage ratio denominator and 8 % of its average total consolidated assets, and (ii) internal eligible long-term debt of at least 6 % of its risk-weighted assets, 2.5 % of its Basel 3 leverage ratio denominator and 3.5 % of its average total consolidated assets. Eligible long-term debt instruments for non-resolution covered IHCs are required to meet certain criteria, including issuance to a foreign company that controls directly or indirectly the covered IHC or a foreign affiliate (a non-US entity that is wholly owned, directly or indirectly, by the non-US G-SIB) and the inclusion of a contractual trigger allowing for, in limited circumstances, the immediate conversion or exchange of some or all of the instrument into Common Equity Tier 1 instruments upon an order by the Federal Reserve Board. Internal TLAC requirements may be satisfied with a combination of eligible long-term debt instruments and Tier 1 capital. Each of DB USA Corporation and DWS USA Corporation would also face restrictions on its discretionary bonus payments and capital distributions if it fails to maintain a TLAC buffer consisting of Common Equity Tier 1 capital above the minimum TLAC requirement equal to 2.5 % of risk-weighted assets. The final rules also prohibit or limit the ability of DB USA Corporation and DWS USA Corporation to engage in certain types of financial transactions.

Furthermore, the Dodd-Frank Act provides for an extensive framework for the regulation of over-the-counter (“OTC”) derivatives, including mandatory clearing, exchange trading and transaction reporting of certain OTC derivatives, as well as rules regarding the registration of, and capital, margin and business conduct standards for, swap dealers, security-based swap dealers, major swap participants and major security-based swap participants. The Commodity Futures Trading Commission (“CFTC”) adopted final rules in 2016 that will require additional interest rate swaps to be cleared, with a phased implementation schedule that ended in October 2018. In December 2016, also pursuant to the Dodd-Frank Act, the CFTC re-proposed regulations to impose position limits on certain commodities and economically equivalent swaps, futures and options. More recently, in November 2018 the CFTC proposed amendments to rules that would significantly expand swap mandatory trading requirements. These proposals have not yet been finalized. The Securities and Exchange Commission (“SEC”) has also finalized rules regarding registration, reporting, business conduct standards and trade acknowledgement and verification requirements for security-based swap dealers and major security-based swap participants, although these rules will not come into effect until the SEC completes further security-based swap rulemakings. Finally, the US prudential regulators (the Federal Reserve Board, the FDIC, the Office of the Comptroller of the Currency, the Farm Credit Administration and the Federal Housing Finance Agency) have adopted final rules establishing margin requirements for non-cleared swaps and security-based swaps, and the CFTC has adopted final rules establishing margin requirements for non-cleared swaps. The final margin rules follow a phased implementation schedule, with certain initial margin and variation margin requirements in effect as of September 2016, additional variation margin requirements in effect as of March 2017, and additional initial margin requirements phased in on an annual basis from September 2017 through September 2020, with the relevant compliance dates depending in each case on the transactional volume of the parties and their affiliates. The SEC proposal to establish margin requirements for non-cleared security-based swaps has not yet been finalized.

The Dodd-Frank Act also requires broader regulation of hedge fund and private equity fund managers, as well as credit rating agencies, and imposes requirements with respect to securitization activities. The federal regulatory agencies have issued final rules, which became effective in 2015 and 2016, to implement the credit risk retention requirements of Section 941 of the Dodd-Frank Act, which generally require securitizers of different types of asset-backed securitizations, including transactions backed by residential mortgages, commercial mortgages, and commercial, credit card and auto loans, to retain at least five percent of the credit risk of the assets being securitized, with an exemption for securitizations that are wholly composed of “qualified residential mortgages.”

The Dodd-Frank Act, as amended, also established a regulatory framework and enhanced regulation for several other areas, including but not limited to the following. The Dodd-Frank Act established a new regime for the orderly liquidation of failing financial companies through the appointment of the FDIC as receiver that is available only if the US Secretary of the Treasury determines in consultation with the US President that certain criteria are met, including that the failure of the company and its resolution under otherwise applicable federal or state law would have serious adverse effects on US financial stability. In addition, the Dodd-Frank Act requires US regulatory agencies to prescribe regulations with respect to incentive-based compensation at financial institutions in order to prevent inappropriate behavior that could lead to a material financial loss. Other provisions require issuers with securities listed on US stock exchanges, which may include foreign private issuers such as Deutsche Bank, to establish a “clawback” policy to recoup previously awarded executive compensation in the event of an accounting restatement; in May 2016, the SEC re-proposed rules to implement this provision of the Dodd-Frank Act that would cover foreign private issuers, but such rules have not yet been adopted. The Dodd-Frank Act also grants the SEC discretionary rule-making authority to impose a new fiduciary standard on brokers, dealers and investment advisers, and expands the extraterritorial jurisdiction of US courts over actions brought by the SEC or the United States with respect to violations of the antifraud provisions of the Securities Act of 1933, the Securities Exchange Act of 1934 and the Investment Advisers Act of 1940.

Implementation of the Dodd-Frank Act and related final regulations will result in additional costs and could limit or restrict the way we conduct our business.

Regulatory Authorities

We, as well as our wholly owned subsidiary DB USA Corporation are bank holding companies under the US Bank Holding Company Act of 1956, as amended (the “Bank Holding Company Act”), by virtue of, among other things, our and its ownership of DBTCA. As bank holding companies, we and DB USA Corporation have elected to become financial holding companies. As a result, we and our US operations are subject to regulation, supervision and examination by the Federal Reserve Board as our US “umbrella supervisor”.

DBTCA is a New York state-chartered bank whose deposits are insured by the FDIC to the extent permitted by law. DBTCA is subject to regulation, supervision and examination by the Federal Reserve Board and the New York State Department of Financial Services and to relevant FDIC regulation. In addition, DBTCA is also subject to regulation by the Consumer Financial Protection Bureau in relation to retail products and services offered to its customers. Deutsche Bank Trust Company Delaware is a Delaware state-chartered bank which is subject to regulation, supervision and examination by the FDIC and the Office of the State Bank Commissioner of Delaware. Deutsche Bank AG’s New York branch is supervised by the Federal Reserve Board and the New York State Department of Financial Services. Deutsche Bank’s federally chartered nondeposit trust companies are subject to regulation, supervision and examination by the Office of the Comptroller of the Currency. We and our subsidiaries are also subject to regulation, supervision and examination by state banking regulators of certain states in which we and they conduct banking operations.

Restrictions on Activities

As described below, federal and state banking laws and regulations restrict our ability to engage, directly or indirectly through subsidiaries, in activities in the United States. Among others, we are required to obtain the prior approval of the Federal Reserve Board before directly or indirectly acquiring the ownership or control of more than 5 % of any class of voting shares of US banks, certain other depository institutions, and bank or depository institution holding companies. Under applicable US federal banking law, our US banking operations are also restricted from engaging in certain “tying” arrangements involving products and services.

Our two US FDIC-insured bank subsidiaries, as well as our New York branch, are subject to requirements and restrictions under federal and state law, including requirements to maintain reserves against deposits, restrictions on the types and amounts of loans that may be made and the interest that may be charged thereon, and limitations on the types of investments that may be made and the types of services that may be offered.

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In addition to the business of banking, and managing or controlling banks, so long as we are a financial holding company under US law, we may also engage in nonbanking activities in the United States that are financial in nature, or incidental or complementary to such financial activity, including certain securities, merchant banking, insurance and other financial activities, subject to certain limitations on the conduct of such activities and to prior regulatory approval in some cases. As a non-US bank, Deutsche Bank AG and our non-US subsidiaries are generally authorized under US law and regulations to acquire a non-US company engaged in non-financial activities as long as that company's US operations do not exceed certain thresholds and certain other conditions are met.

In November 2018, the Federal Reserve Board adopted a revised supervisory rating system for bank holding companies with US\$ 100 billion or more in total consolidated assets and for IHCs with US\$ 50 billion or more in total consolidated assets, such as DB USA Corporation. The revised system will also generally apply to DWS USA Corporation. Under the revised system, which became effective February 1, 2019, covered companies will receive separate ratings from the Federal Reserve Board for (i) capital planning and positions, (ii) liquidity risk management and positions and (iii) governance and controls. Each of these component areas will receive one of the following four ratings: (i) Broadly Meets Expectations, (ii) Conditionally Meets Expectations, (iii) Deficient-1, and (iv) Deficient-2. A covered company will have to maintain a rating of Broadly Meets Expectations or Conditionally Meets Expectations for each of the three components to be considered "well managed."

In August 2017, the Federal Reserve Board issued proposed guidance intended to enhance the effectiveness of boards of directors and refocus the Federal Reserve Board's supervisory expectations for boards of directors on their core responsibilities, and also to delineate between roles and responsibilities for boards of directors and for senior management. Although the proposed guidance does not directly apply to DB USA Corporation or DWS USA Corporation, the Federal Reserve Board indicated that it expects to issue a separate proposal on governance specific to IHCs.

Our status as a financial holding company, and our resulting ability to engage in a broader range of nonbanking activities, are dependent on Deutsche Bank AG, DB USA Corporation and our two insured US depository institutions qualifying as "well capitalized" and "well managed" under applicable regulations and upon our insured US depository institutions meeting certain requirements under the Community Reinvestment Act. The Federal Reserve Board's and other US regulators' "well capitalized" standards are generally based on specified quantitative thresholds set at levels above the minimum requirements to be considered "adequately capitalized." For our two insured depository institution subsidiaries, Deutsche Bank Trust Company Americas and Deutsche Bank Trust Company Delaware, the well-capitalized thresholds under the US Basel 3 framework are a Common Equity Tier 1 capital ratio of 6.5 %, a Tier 1 capital ratio of 8 %, a Total capital ratio of 10 %, and a US leverage ratio of 5 %. For bank holding companies, including Deutsche Bank AG and DB USA Corporation, the well-capitalized thresholds are a Tier 1 capital ratio of 6 % and a Total capital ratio of 10 %, both of which in the case of Deutsche Bank AG are calculated for Deutsche Bank AG under its home country standards.

State-chartered banks (such as DBTCA) and state-licensed branches and agencies of foreign banks (such as our New York branch) may not, with certain exceptions that require prior regulatory approval, engage as a principal in any type of activity not permissible for their federally chartered or licensed counterparts. In addition, DBTCA and Deutsche Bank Trust Company Delaware are subject to their respective state banking laws pertaining to legal lending limits and

permissible investments and activities. Likewise, the United States federal banking laws also subject state branches and agencies to the single-borrower lending limits that apply to federal branches or agencies, which are substantially similar to the lending limits applicable to national banks. The single-borrower lending limits applicable to branches and agencies are calculated based on the dollar equivalent of the capital of the foreign bank (i.e., Deutsche Bank AG in the case of the New York branch).

The Federal Reserve Board may terminate the activities of any US office of a foreign bank if it determines that the foreign bank is not subject to comprehensive supervision on a consolidated basis in its home country or that there is reasonable cause to believe that such foreign bank or its affiliate has violated the law or engaged in an unsafe or unsound banking practice in the United States or, for a foreign bank that presents a risk to the stability of the United States financial system, the home country of the foreign bank has not adopted, or made demonstrable progress toward adopting, an appropriate system of financial regulation to mitigate such risk.

Also, under the so-called swaps “push-out” provisions of the Dodd-Frank Act, certain structured finance derivatives activities of FDIC-insured banks and US branch offices of foreign banks (including our New York branch) are restricted.

There are various qualitative and quantitative restrictions on the extent to which we and our nonbank subsidiaries can borrow or otherwise obtain credit from our US banking subsidiaries or engage in certain other transactions involving those subsidiaries, including derivative transactions and securities borrowing or lending transactions. In general, these transactions must be on terms that would ordinarily be offered to unaffiliated entities, must be secured by designated amounts of specified collateral and are subject to volume limitations. These restrictions also apply to certain transactions of our New York branch with our US broker-dealers and certain of our other US affiliates.

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A major focus of US governmental policy relating to financial institutions is aimed at preventing money laundering and terrorist financing and compliance with economic sanctions in respect of designated countries or activities. Failure of an institution to have policies and procedures and controls in place to prevent, detect and report money laundering and terrorist financing could in some cases have serious legal, financial and reputational consequences for the institution.

New York Branch

The New York branch of Deutsche Bank AG is licensed by the Superintendent of the New York State Department of Financial Services to conduct a commercial banking business and is required to maintain and pledge eligible high-quality assets with banks in the State of New York (up to a maximum of US\$ 100 million of assets pledged so long as the foreign bank remains designated as “well-rated” by the Superintendent of Financial Services). Should we cease to be designated as “well-rated” by the Superintendent of Financial Services, we may need to maintain substantial additional amounts of eligible assets. The Superintendent of Financial Services may also impose asset maintenance requirements on foreign banks with branch offices in New York. In addition, the Federal Reserve Board is authorized to impose institution-specific asset maintenance requirements under certain conditions, pursuant to the FBO Rules. Currently, no such requirements have been imposed upon our New York branch.

The New York State Banking Law authorizes the Superintendent of Financial Services to take possession of the business and property of a New York branch of a foreign bank under certain circumstances, generally involving violation of law, conduct of business in an unsafe manner, impairment of capital, suspension of payment of obligations, or initiation of liquidation proceedings against the foreign bank at its domicile or elsewhere. In liquidating

or dealing with a branch's business after taking possession of a branch, only the claims of depositors and other creditors which arose out of transactions with a branch are to be accepted by the Superintendent of Financial Services for payment out of the business and property of the foreign bank in the State of New York or in the US and reflected on the books of the New York branch, without prejudice to the rights of the holders of such claims to be satisfied out of other assets of the foreign bank. After such claims are paid, the Superintendent of Financial Services will turn over the remaining assets, if any, first to the liquidators of other offices of the foreign bank that are being liquidated in the United States and then, if any assets remain, to the foreign bank or its duly appointed liquidator or receiver.

Deutsche Bank Trust Company Americas

The Federal Deposit Insurance Corporation Improvement Act of 1991 ("FDICIA") provides for extensive regulation of depository institutions (such as DBTCA and its direct and indirect parent companies), including requiring federal banking regulators to take "prompt corrective action" with respect to FDIC-insured banks that do not meet minimum capital requirements. As an insured bank's capital level declines and the bank falls into lower categories (or if it is placed in a lower category by the discretionary action of its supervisor), greater limits are placed on its activities and federal banking regulators are authorized (and, in many cases, required) to take increasingly more stringent supervisory actions, which could ultimately include the appointment of a conservator or receiver for the bank (even if it is solvent). In addition, FDICIA generally prohibits an FDIC-insured bank from making any capital distribution (including payment of a dividend) or payment of a management fee to its holding company if the bank would thereafter be undercapitalized. If an insured bank becomes "undercapitalized", it is required to submit to federal regulators a capital restoration plan guaranteed by the bank's holding company. Since the enactment of FDICIA, both of our US insured banks have maintained capital above the "well capitalized" standards, the highest capital category under applicable regulations.

DBTCA, like other FDIC-insured banks, is required to pay assessments to the FDIC for deposit insurance under the FDIC's Deposit Insurance Fund (calculated using the FDIC's risk-based assessment system). The minimum reserve ratio for the Deposit Insurance Fund was increased under the Dodd-Frank Act from 1.15 % to 1.35 %, with the target of 1.35 % to be reached by 2020 and with the incremental cost charged to banks with more than US\$ 10 billion in assets. In addition, the FDIC has set the designated reserve ratio at 2 % as a long-term goal. This shift has had financial implications for all FDIC-insured banks, including DBTCA. In order to achieve the 1.35 % goal, in March 2016, the FDIC adopted a rule imposing an additional surcharge of 4.5 % per \$ 100 of the quarterly assessments (after making certain adjustments) of insured depository institutions with total consolidated assets of US\$ 10 billion or more, including DBTCA. The surcharge took effect on July 1, 2016 and ended as of September 30, 2018, when the 1.35 % goal had been met. The FDIC's standard maximum deposit insurance amount per customer at an insured depository institution is US\$ 250,000.

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Other

In the United States, our US-registered broker-dealers are regulated by the SEC. Broker-dealers are subject to regulations that cover all aspects of the securities business, including sales methods, trade practices among broker-dealers, use and safekeeping of customers' funds and securities, capital structure, recordkeeping, the financing of customers' purchases and the conduct of directors, officers and employees.

Our principal US SEC-registered broker-dealer subsidiary, Deutsche Bank Securities Inc., is a member of the New York Stock Exchange (and other securities exchanges) and is regulated by the Financial Industry Regulatory Authority, Inc. ("FINRA") and the individual state securities authorities in the states in which it operates. The US

government agencies and self-regulatory organizations, as well as state securities authorities in the United States having jurisdiction over our US broker-dealer affiliates, are empowered to conduct administrative proceedings that can result in censure, fine, the issuance of cease-and-desist orders or the suspension or expulsion of a broker-dealer or its directors, officers or employees. Deutsche Bank Securities Inc. is also registered with and regulated by the SEC as an investment adviser, and by the CFTC and the National Futures Association as a futures commission merchant and commodity pool operator.

Under the Dodd-Frank Act, with certain exceptions, our entities that are swap dealers, security-based swap dealers, major swap participants or major security-based swap participants are registered or will be required to register with the SEC or CFTC, or both. Currently, Deutsche Bank AG is provisionally registered as a swap dealer. At a future date, we will be required to register one or more subsidiaries as security-based swap dealers with the SEC and may be required to register additional subsidiaries as swap dealers with the CFTC and certain subsidiaries as CFTC-regulated major swap participants and/or SEC-regulated major security-based swap participants. Registration, including provisional registration, as swap dealers, security-based swap dealers, major swap participants or major security-based swap participants subjects us to requirements as to capital, margin, business conduct and recordkeeping, among other requirements.

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Organizational Structure

We operate our business along the structure of our three corporate divisions. Deutsche Bank AG is the direct or indirect holding company for our subsidiaries. The following table sets forth the significant subsidiaries we own, directly or indirectly, as of December 31, 2018. We used the three-part test set out in Section 1-02 (w) of Regulation S-X under the U.S. Securities Exchange Act of 1934 to determine significance. We do not have any other subsidiaries we believe are material based on other, less quantifiable, factors.

We own 100 % of the equity and voting interests in these subsidiaries except for DWS Group GmbH & Co. KGaA, of which we own 79.49 % of equity and voting interests. These subsidiaries prepare financial statements as of December 31, 2018, and are included in our consolidated financial statements. Their principal countries of operation are the same as their countries of incorporation.

Subsidiary	Place of Incorporation
DB USA Corporation ¹	Delaware, United States
Deutsche Bank Americas Holding Corporation ²	Delaware, United States
DB U.S. Financial Markets Holding Corporation ³	Delaware, United States
Deutsche Bank Securities Inc. ⁴	Delaware, United States
Deutsche Bank Trust Corporation ⁵	New York, United States
Deutsche Bank Trust Company Americas ⁶	New York, United States
Deutsche Bank Luxembourg S.A. ⁷	Luxembourg
DB Privat- und Firmenkundenbank AG ⁸	

Other

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Frankfurt am
Main, Germany

DB Beteiligungs-Holding GmbH⁹

Frankfurt am
Main, Germany

DWS Group GmbH & Co. KGaA¹⁰

Frankfurt am
Main, Germany

¹DB USA Corporation is the top-level holding company for our subsidiaries in the United States other than those held through DWS Group.

²Deutsche Bank Americas Holding Corporation is a second tier holding company for subsidiaries in the United States.

³DB U.S. Financial Markets Holding Corporation is a second tier holding company for subsidiaries in the United States.

⁴Deutsche Bank Securities Inc. is a U.S. company registered as a broker dealer and investment advisor with the Securities and Exchange Commission and as a futures commission merchant with the Commodities Futures Trading Commission.

⁵Deutsche Bank Trust Corporation is a bank holding company under Federal Reserve Board regulations.

⁶ Deutsche Bank Trust Company Americas is a New York State-chartered bank and member of the Federal Reserve System. It originates loans and other forms of credit, accepts deposits, arranges financings and provides numerous other commercial banking and financial services.

⁷The company's primary business model comprises loan business with international clients (Corporate & Investment Bank), where the bank acts globally as lending office and as risk transfer hub for the Credit Portfolio Strategies Group of Deutsche Bank, as well as structured finance activities covering long-term infrastructure projects and high quality investment goods. Furthermore, the bank offers tailor-made solutions with a wide range of products and services to their Wealth Management clients.

⁸The company serves private individuals, affluent clients as well as small and medium sized corporate clients with banking products. In May 2018, Deutsche Postbank AG was merged with Deutsche Bank Privat- und Geschäftskunden AG and in addition this entity was renamed to DB Privat- und Firmenkundenbank AG.

⁹The company holds the majority stake in DWS Group GmbH & Co. KGaA.

¹⁰ On February 20, 2018, the general shareholders' meeting of DWS Group SE resolved to change the legal form of the Company into a partnership limited by shares (Kommanditgesellschaft auf Aktien) with a German limited liability company (Gesellschaft mit beschränkter Haftung) as a general partner, organized under German law, and changed the Company's legal name to DWS Group GmbH & Co. KGaA. These changes became effective upon registration with the Commercial Register on March 3, 2018. The business purpose of the company is the holding of participations in as well as the management and support of a group of financial services providers. DWS Group GmbH & Co. KGaA was publicly listed on the Frankfurt Stock Exchange on March 23, 2018, almost a year after Deutsche Bank AG announced its plan to separate its asset management division into a new subsidiary and list the shares of this subsidiary on the stock exchange. DWS Group GmbH & Co. KGaA was established to act as the parent company of the separated Deutsche Bank Asset Management business. The transfer of all Deutsche Bank Group Asset Management related operations to DWS Group GmbH & Co. KGaA has been carried out in stages, materially completed in 2017 and the first half of 2018.

Property and Equipment

As of December 31, 2018, we operated in 59 countries out of 2,064 branches around the world, of which 68 % were in Germany. We lease a majority of our offices and branches under long-term agreements.

We continue to review our property requirements worldwide taking into account cost containment measures as well as growth initiatives in selected businesses. Please see Note 23 “Property and Equipment” to the consolidated financial statements for further information.

Information Required by Industry Guide 3

Please see pages S-1 through S-20 of the Supplemental Financial Information, which pages are incorporated by reference herein, for information required by SEC Industry Guide 3.

Item 4A: Unresolved Staff Comments

We have not received written comments from the Securities and Exchange Commission regarding our periodic reports under the Exchange Act, as of any day 180 days or more before the end of the fiscal year to which this annual report relates, which remain unresolved.

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Item 5: Operating and Financial Review and Prospects

Overview

The following discussion and analysis should be read in conjunction with the consolidated financial statements and the related notes to them included in “Item 18: Financial Statements” of this document, on which we have based this discussion and analysis.

We have prepared our consolidated financial statements in accordance with IFRS as issued by the International Accounting Standards Board (“IASB”) and as endorsed by the European Union (“EU”).

Significant Accounting Policies and Critical Accounting Estimates

Our significant accounting policies are essential to understanding our reported results of operations and financial condition. Certain of these accounting policies require critical accounting estimates that involve complex and subjective judgments and the use of assumptions, some of which may be for matters that are inherently uncertain and susceptible to change. Such critical accounting estimates could change from period to period and have a material impact on our financial condition, changes in financial condition or results of operations. Critical accounting estimates could also involve estimates where management could have reasonably used another estimate in the current accounting period. Actual results may differ from these estimates if conditions or underlying circumstances were to change. See Note 1 “Significant Accounting Policies and Critical Accounting Estimates” to the consolidated financial statements for a discussion on our significant accounting policies and critical accounting estimates.

We have identified the following significant accounting policies that involve critical accounting estimates:

- the impairment of associates
- the impairment of financial assets available for sale
- the impairment of financial assets classified as fair value through other comprehensive income
- the determination of fair value
- the recognition of trade date profit
- the impairment of loans and provisions for off-balance sheet positions
- the impairment of goodwill and other intangibles
- the recognition and measurement of deferred tax assets
- the accounting for legal and regulatory contingencies and uncertain tax positions

Recently Adopted Accounting Pronouncements and New Accounting Pronouncements

See Note 2 “Recently Adopted and New Accounting Pronouncements” to the consolidated financial statements for a discussion on our recently adopted and new accounting pronouncements.

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Operating Results

You should read the following discussion and analysis in conjunction with our consolidated financial statements.

Executive Summary

Please see “Management Report: Operating and Financial Review: Executive Summary” in the Annual Report 2018.

Trends and Uncertainties

For insight into the trends impacting our performance please see the “Management Report: Operating and Financial Review” section of the Annual Report 2018. Key risks and uncertainties for the Bank are discussed in “Item 3: Key Information – Risk Factors”.

The Bank’s future performance and the implementation of our strategic goals could be influenced by a number of uncertainties. Challenges may arise from sustained market volatility, increasing competitive pressures, potential deterioration of international trade relations, outcome of Brexit negotiations, weakness of global, regional and national economic conditions and political instability in key markets.

In addition, regulatory, tax and supervisory requirements continue to evolve. Regulatory changes have and may continue to increase our costs, restrict our operations, or require structural change, which could put pressure on our capital position. In addition, we are involved in litigation, tax examinations, arbitration and regulatory proceedings and investigations in Germany and in a number of jurisdictions outside Germany, especially in the US. Such matters are subject to many uncertainties.

While we seek to achieve efficiencies in our operations, the realization of planned savings are dependent on the successful and timely implementation of our updated strategy measures. The benefits, costs and timeframe of the

implementation of our strategy could be adversely affected by unforeseen difficulties in the implementation process as well as factors beyond our control, such as negative market developments.

Risks to Corporate & Investment Bank (CIB) outlook include potential impacts on our business model from Brexit and other macro and global geopolitical uncertainty. Risks regarding a potential deterioration of international trade relations cause further concerns. Uncertainty around central bank policies, ongoing regulatory developments (e.g., Basel III framework agreement) also pose risks, while challenges such as event risks and levels of client activity may also have an adverse impact.

Risks to Private & Commercial Bank (PCB) outlook are slower economic growth in our major operating countries, a delayed or less pronounced interest rate recovery than expected, and lower client activity in the investment business. Client activity could be affected by adverse developments or market uncertainties, including higher than expected volatility in equity and credit markets. The implementation of regulatory requirements including consumer protection measures and delays in the implementation of our strategic projects could also have a negative impact on our revenue and costs.

Risks to Asset Management (AM) outlook include the longevity of the bull market, continued low interest rates in developed markets, pace of emerging economies growth and increase in wealth, as well as the increasing demand for retirement products in developed countries' aging populations. Continued elevated levels of political uncertainty worldwide, protectionist and anti-trade policies, and the United Kingdom's decision to leave the European Union could have unpredictable consequences in the economy, market volatility and investor's confidence, which may lead to declines in business and could affect our revenues and profits as well as the execution of our strategic plans. In addition, the evolving regulatory framework could lead to unforeseen regulatory compliance costs and possible delays in the implementation of our efficiency measures due to jurisdictional restrictions, which could have an adverse impact on our cost base.

Performance in Corporate & Other is impacted by valuation and timing differences from different accounting methods used for management reporting and IFRS, plus unallocated items. We still expect volatility from these items in our future results.

Our effective tax rate was primarily impacted by changes in the recognition and measurement of deferred tax assets and share based payments related tax effects. Going forward these items may continue to impact our effective tax rate depending upon our performance and movements in our share price. The effective tax rate in future periods may also be influenced by changes in tax laws or interpretative guidance, the occurrence of non-tax deductible goodwill impairment, litigation and other charges, or the resolution of tax examinations and investigations.

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Results of Operations

Please see "Management Report: Operating and Financial Review: Results of Operations" in the Annual Report 2018 and our discussion of Non-GAAP financial measures in the "Supplementary Information (Unaudited)" in the Annual Report 2018.

Financial Position

Please see "Management Report: Operating and Financial Review: Financial Position" in the Annual Report 2018.

Liquidity and Capital Resources

For a detailed discussion of our liquidity risk management, see “Management Report: Risk Report: Liquidity Risk” in the Annual Report 2018.

For a detailed discussion of our capital management, see “Management Report: Risk Report: Capital Management” in the Annual Report 2018.

Post-Employment Benefit Plans

Please see “Management Report: Employees: Post-Employment Benefit Plans” in the Annual Report 2018.

Off-Balance Sheet Arrangements

For information on the nature, purpose and extent of our off-balance sheet arrangements, please see Note 40 “Structured Entities” to the consolidated financial statements. For further information on off-balance sheet arrangements, including allowances for off-balance sheet positions, please refer to “Management Report: Risk Report: Asset Quality: Allowance for Credit Losses” in the Annual Report 2018 and Note 21 “Allowance for Credit Losses” to the consolidated financial statements. For information on irrevocable lending commitments and contingent liabilities with respect to third parties, please see Note 30 “Credit related Commitments” to the consolidated financial statements.

Tabular Disclosure of Contractual Obligations

Please see “Management Report: Operating and Financial Review: Tabular Disclosure of Contractual Obligations” in the Annual Report 2018.

Research and Development, Patents and Licenses

Not applicable.

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Item 6: Directors, Senior Management and Employees

Directors and Senior Management

In accordance with the German Stock Corporation Act (Aktiengesetz), we have a Management Board (Vorstand) and a Supervisory Board (Aufsichtsrat). The German Stock Corporation Act prohibits simultaneous membership on both the Management Board and the Supervisory Board. The members of the Management Board are the executive officers of our company. The Management Board is responsible for managing our company and representing us in dealings with third parties. The Supervisory Board oversees the Management Board, appoints and removes its members and determines their remuneration and other compensation components, including pension benefits. According to German law, our Supervisory Board represents us in dealings with members of the Management Board. Therefore, no members of the Management Board may enter into any agreement with us without the prior consent of our Supervisory Board.

German law does not require the members of the Management Board nor the members of the Supervisory Board to own any of our shares to be qualified. In addition, German law has no requirement that members of the Management Board retire based on an age limit. However, age limits for members of the Management Board are defined contractually. Age limits also exist for the members of the Supervisory Board according to the Terms of Reference (Geschäftsordnung) for our Supervisory Board. There is a maximum age limit of 70 years for members of the Supervisory Board. In exceptional cases, a Supervisory Board member can be elected or appointed for a period that extends no longer than until the end of the fourth Ordinary General Meeting that takes place after he/she has turned the age of 70.

The Supervisory Board may not make management decisions. However, German law and our Articles of Association (Satzung) require the Management Board to obtain the approval of the Supervisory Board for certain actions. The most important of these actions are:

- granting of general powers of attorney (Generalvollmachten). A general power of attorney authorizes its holder to represent the company in substantially all legal matters without limitation to the affairs of a specific office;
- acquisitions and disposals (including transactions carried out by a dependent company) of real estate in so far as the object involves more than € 500,000,000;
- granting of credits and the acquisition of participations in other companies, where the German Banking Act (Kreditwesengesetz) requires approval by the Supervisory Board. In particular, pursuant to the German Banking Act, it requires inter alia the approval of the Supervisory Board if we grant a loan (to the extent legally permissible) to a member of the Management Board or the Supervisory Board or one of our employees who holds a procuration (Prokura) or general power of attorney; and
- acquisitions and disposals (including transactions carried out by a dependent company) of other participations, insofar as the object involves more than € 1 billion. The Supervisory Board must be informed without delay of any acquisition or disposal of such participations involving more than € 500,000,000.

The Management Board must submit regular reports or ad-hoc reports, as the case may be, to the Supervisory Board on our current operations and future business planning as well as on our risk situation. The Supervisory Board may also request special reports from the Management Board at any time.

With respect to voting powers, a member of the Supervisory Board or the Management Board may not vote on resolutions open to a vote at a board meeting if the proposed resolution concerns:

- a legal transaction between us and the member; or
- commencement, settlement or completion of legal proceedings between us and the member.

A member of the Supervisory Board or the Management Board may not directly or indirectly exercise voting rights on resolutions open to a vote at a shareholders' meeting (Hauptversammlung, which we refer to as the General Meeting) if the proposed resolution concerns:

- ratification of the member's acts;
- a discharge of liability of the member; or
- enforcement of a claim against the member by us.

Supervisory Board and Management Board

In carrying out their duties, members of both the Management Board and Supervisory Board must exercise the

standard of care of a prudent and diligent business person, and they are liable to us for damages if they fail to do so.

The liability of the members of the Management Board or the Supervisory Board under the German Stock Corporation Act for breach of their fiduciary duties is to the company rather than individual shareholders. However, individual shareholders that hold at least 1 % or € 100,000 of the subscribed capital and are granted standing by the court may also invoke such liability to the company. The underlying concept is that all shareholders should benefit equally from amounts received under this liability by adding such amounts to the company's assets rather than disbursing them to plaintiff shareholders. We may waive the right to claim damages or settle these claims if at least three years have passed since the alleged breach and if the shareholders approve the waiver or settlement at the General Meeting with a simple majority of the votes cast, and provided that opposing shareholders do not hold, in the aggregate, one tenth or more of our share capital and do not have their opposition formally noted in the minutes maintained by a German notary.

Supervisory Board

Our Articles of Association require our Supervisory Board to have twenty members. In the event that the number of members on our Supervisory Board falls below twenty and remains below twenty for more than three months or falls below ten, upon application to a competent court, the court must appoint replacement members to serve on the board until official appointments are made.

The German Co-Determination Act of 1976 (Mitbestimmungsgesetz) requires that the shareholders elect half of the members of the supervisory board of large German companies, such as Deutsche Bank, and that employees in Germany elect the other half. None of the current members of either of our boards were selected pursuant to any arrangement or understandings with major shareholders, customers or others.

Each member of the Supervisory Board generally serves for a fixed term of approximately five years. For the election of shareholder representatives, the General Meeting may establish that the terms of office of individual members may begin or end on differing dates. Pursuant to German law, the term expires at the latest at the end of the Annual General Meeting that approves and ratifies such member's actions in the fourth fiscal year after the year in which the Supervisory Board member was elected. Supervisory Board members may also be re-elected. The shareholders may, by a majority of the votes cast in a General Meeting, remove any member of the Supervisory Board they have elected in a General Meeting. The employees may remove any member they have elected by a vote of three-quarters of the employee votes cast.

The members of the Supervisory Board elect the chairperson and the deputy chairperson of the Supervisory Board. Traditionally, the chairperson is a representative of the shareholders, and the deputy chairperson is a representative of the employees. At least half of the members of the Supervisory Board must be present at a meeting or must have submitted their vote in writing to constitute a quorum. In general, approval by a simple majority of the members of the Supervisory Board present and voting is required to pass a resolution. In the case of a deadlock, the resolution is put to a second vote. In the case of a second deadlock, the chairperson has the deciding vote.

For additional information on our Supervisory Board, including a table providing the names of and biographical information for the current members, see "Corporate Governance Statement/Corporate Governance Report: Management Board and Supervisory Board: Supervisory Board" in the Annual Report 2018.

Standing Committees

For information on the standing committees of our Supervisory Board, please see "Corporate Governance Statement/Corporate Governance Report: Management Board and Supervisory Board: Standing Committees" in the Annual Report 2018.

The business address of the members of the Supervisory Board is the same as our business address, Taunusanlage 12, 60325 Frankfurt am Main, Germany.

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Management Board

Our Articles of Association require the Management Board to have at least three members. Our Management Board currently has nine members. The Supervisory Board has also appointed a Chairman (CEO) and two Deputy Chairmen (Presidents) of the Management Board.

The Supervisory Board appoints the members of the Management Board for a maximum term of five years and oversees them. They may be re-appointed or have their term extended for one or more terms of up to a maximum of five years each. The Supervisory Board may remove a member of the Management Board prior to the expiration of his or her term for good cause.

Pursuant to our Articles of Association, two members of the Management Board, or one member of the Management Board together with a holder of procuration, may represent us for legal purposes. A holder of procuration is an attorney-in-fact who holds a legally defined power under German law, which cannot be restricted with respect to third parties. However, pursuant to German law, the Management Board itself must resolve on certain matters as a whole and may not delegate the decision to one or more individual members. In particular, it may not delegate the determination of our business and risk strategies, and the coordinating or controlling responsibilities. The Management Board is required to ensure that shareholders are treated on an equal basis and receive equal information. The Management Board is also responsible for ensuring our proper business organization, which includes appropriate and effective risk management as well as compliance with legal requirements and internal guidelines, and for taking the necessary measures to ensure that adequate internal guidelines are developed and implemented.

Other selected responsibilities of the Management Board in accordance with the Terms of Reference for the Management Board and/or German law are:

- appointing key personnel at the level directly below the Management Board, in particular, appointing the Global Key Function Holders employed by us;
- making decisions regarding significant credit exposures or other risks which have not been delegated to individual risk management units;
- acquisition and disposal of equity investments, including capital measures in all cases in which (i) the law or our Articles of Association require approval by the Supervisory Board, or (ii) the equivalent of € 100 million is exceeded;
- acquisition and disposal of real estate – directly or by separate legal entities – in all cases in which: (i) the law or our Articles of Association require approval by the Supervisory Board, or (ii) the real estate's equivalent exceeds € 100 million;
- individual vendor or intra Group-outsourcings (or material changes to those outsourcings) in all cases in which the equivalent of € 100 million is exceeded on an annual basis or include the delegation of core organizational duties of the Management Board;
- calling shareholders' meetings;
- filing petitions to set aside shareholders' resolutions;
- preparing and executing shareholders' resolutions; and
- reporting to the Supervisory Board.

For additional information on our Management Board, including the names of and biographical information for the current members, see “Corporate Governance Statement/Corporate Governance Report: Management Board and Supervisory Board: Management Board” in the Annual Report 2018. The Terms of Reference of the Management Board are published on our website www.db.com/ir/en/documents.htm.

Board Practices of the Management Board

The Terms of Reference for the Management Board are in accordance with the Supervisory Board resolution of January 31, 2019. These Terms of Reference provide that the members of the Management Board have the collective responsibility for managing Deutsche Bank. Notwithstanding this principle, the allocation of functional responsibilities to the individual members of the Management Board and their substitution (in case of temporary absence) are set out in the business allocation plan for the Management Board in accordance with the Supervisory Board resolution of January 1, 2019. The allocation of functional responsibilities does not exempt any member of the Management Board from collective responsibility for the management of the business. The members of the Management Board have primary responsibility for the proper performance and/or delegation of their duties and the clear allocation of accountabilities and responsibilities within the area of own functional responsibility (so-called “Ressort”).

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Members of the Management Board are bound to the corporate interest of Deutsche Bank. No member of the Management Board may pursue personal interests in his/her decisions or use business opportunities intended for the company for himself/herself. As permitted by German law, individual members of the Management Board may exercise Deutsche Bank Group-external mandates, honorary offices or special assignments. In order to effectively prevent any conflicts of interest, the members of the Management Board may accept such activities only upon the approval of the other members of the Management Board and the Chairman’s Committee of the Supervisory Board. Management Board members generally do not accept the chair of supervisory boards of Group-external companies.

Section 161 of the German Stock Corporation Act requires that the management board and supervisory board of any German stock exchange-listed company declare annually that the company complies with the recommendations of the German Corporate Governance Code or, if not, which recommendations the company does not comply with (so-called “comply or explain”-principle). These recommendations go beyond the requirements of the German Stock Corporation Act. The Management Board and Supervisory Board issued a new Declaration of Conformity in accordance with Section 161 of the German Stock Corporation Act on October 25, 2018, which is available on our internet website at www.db.com/ir/en/documents.htm under the heading “Declaration of Conformity pursuant to § 161 German Stock Corporation Act (AktG), Oct 2018”.

For information on the Management Board’s terms of office, please see “Corporate Governance Statement/Corporate Governance Report: Management Board and Supervisory Board: Management Board” in the Annual Report 2018. For details of the Management Board’s service contracts providing benefits upon termination, please see “Compensation Report: Pension and Transitional Benefits” and “Compensation Report: Other Benefits upon Early Termination” in the Management Report of the Annual Report 2018.

Compensation

For information on the compensation of the members of our Management Board, see “Management Report: Compensation Report: Management Board Compensation Report” in the Annual Report 2018.

For information on the compensation of the members of our Employees, see “Management Report: Compensation Report: Employee Compensation Report” in the Annual Report 2018.

For information on the compensation of the members of our Supervisory Board, see “Management Report: Compensation Report: Compensation System for Supervisory Board Members” in the Annual Report 2018.

Employees

For information on our employees, see “Management Report: Employees” in the Annual Report 2018.

Share Ownership

For the share ownership of the Management Board, see “Management Report: Compensation Report: Management Board Share Ownership” in the Annual Report 2018.

For the share ownership of the members of the Supervisory Board, see “Corporate Governance Statement/Corporate Governance Report: Reporting and Transparency: Directors’ Share Ownership” in the Annual Report 2018.

For a description of our employee share programs, please see Note 35 “Employee Benefits” to the consolidated financial statements.

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Item 7: Major Shareholders and Related Party Transactions

Major Shareholders

On December 31, 2018, our issued share capital amounted to € 5,290,939,215.36 divided into 2,066,773,131 no par value ordinary registered shares.

On December 31, 2018, we had 644,013 registered shareholders. 1,032,635,943 of our shares were registered in the names of 631,991 shareholders resident in Germany, representing 50.16 % of our share capital. 279,848,317 of our shares were registered in the names of 668 shareholders resident in the United States, representing 13.59 % of our share capital.

The German Securities Trading Act (Wertpapierhandelsgesetz) requires investors in publicly-traded corporations whose investments reach certain thresholds to notify both the corporation and the BaFin of such change within four trading days. The minimum disclosure threshold is 3 % of the corporation’s issued voting share capital.

BlackRock, Inc., Wilmington, DE, has notified us that as of January 31, 2019 it held 4.88 % of our shares. We have received no further notification by BlackRock, Inc., Wilmington, DE, through March 1, 2019.

Douglas L. Braunstein (Hudson Executive Capital LP), has notified us that as of October 31, 2018 he held 3.14 % of our shares. We have received no further notification by Douglas L. Braunstein (Hudson Executive Capital LP), through March 1, 2019.

Paramount Services Holdings Ltd., British Virgin Islands, has notified us that as of August 20, 2015 it held 3.05 % of our shares. We have received no further notification by Paramount Services Holdings Ltd., British Virgin Islands, through March 1, 2019.

Supreme Universal Holdings Ltd., Cayman Islands, has notified us that as of August 20, 2015 it held 3.05 % of our shares. We have received no further notification by Supreme Universal Holdings Ltd., Cayman Islands, through March 1, 2019.

Stephen A. Feinberg (Cerberus), has notified us that as of November 14, 2017 he held 3.001 % of our shares. We have received no further notification by Stephen A. Feinberg (Cerberus), through March 1, 2019.

C-QUADRAT Special Situations Dedicated Fund, Cayman Islands, has notified us that as of July 13, 2018 it held 1.01 % of our shares (total percentage of voting rights: 7.64 % (voting rights attached to shares: 1.01 %, voting rights through financial instruments: 6.63 %)). We have received no further notification by C-QUADRAT Special Situations Dedicated Fund, Cayman Islands, through March 1, 2019.

We are neither directly nor indirectly owned nor controlled by any other corporation, by any government or by any other natural or legal person severally or jointly.

Pursuant to German law and our Articles of Association, to the extent that we may have major shareholders at any time, we may not give them different voting rights from any of our other shareholders.

We are not aware of any arrangements which may at a subsequent date result in a change in control of our company.

Related Party Transactions

We have business relationships with a number of the companies in which we own significant equity interests. We also have business relationships with a number of companies where members of our Management Board also hold positions on boards of directors. Our business relationships with these companies cover many of the financial services we provide to our clients generally. For more detailed information, refer to Note 38 “Related Party Transactions” to the consolidated financial statements.

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We conduct our business with these companies on terms equivalent to those that would prevail if we did not have equity holdings in them or management members in common, and we have conducted business with these companies on that basis in 2018 and prior years. None of these transactions is or was material to us.

Among our business with related party companies in 2018, there have been and currently are loans, guarantees and commitments, which totaled € 189 million (including loans amounting to € 186 million) as of December 31, 2018, compared to € 313 million (including loans amounting to € 213 million) as of December 31, 2017.

All these credit exposures

- were made in the ordinary course of business,
- were made on substantially the same terms, including interest rates and collateral, as those prevailing at the time for comparable transactions with other persons, and

- did not involve more than the normal risk of collectability or present other unfavorable features compared to loans to nonrelated parties at their initiation.

Related Party Impaired Loans

In addition to our other shareholdings, we hold acquired equity interests in some of our clients arising from our efforts to protect our then-outstanding lending exposures to them.

Impaired loans to related parties which may exhibit more than normal risk of collectability or present other unfavorable features compared to performing loans to related parties amount to € 10 million, unchanged from December 31, 2017. The following table presents an overview of the impaired loans we hold of our related parties as of December 31, 2018.

in € m.	Amount outstanding as of December 31, 2018	Largest amount outstanding January 1, to December 31, 2018	Provision for loan losses in 2018 ¹	Allowance for loan losses as of December 31, 2018	Nature of the loan and transaction in which incurred
Customer A	10	10	7 ²	10	Company was put into a court-supervised debt moratorium process in 2016. This triggered a debt to equity swap for 70% of our loans and a € 25 million write-off in 2017. Received shares are not valued due to debt moratorium and 1-year trading lock-up period. According to the proposed investor plan no payments are expected until 2022.
Total	10	10	7	10	

¹The allowance for loan losses is calculated by subtracting the net present value of future expected cash flows from the current outstanding. The year-end balance of the loan loss allowance is in most cases lower than the amount of provision for credit losses required for the recognition due to unwinding effects based upon passage of time which are recognized in interest income.

²Including FX effect of € 0.4 million and unwinding of € 0.4 million.

In the above table, customer A is a company in which we hold a minority share and which is not consolidated at equity.

We have not disclosed the name of the related party customer described above because we have concluded that such disclosure would violate applicable privacy laws, such as customer confidentiality and data protection laws, and this customer has not waived application of these privacy laws. A legal opinion regarding the applicable privacy laws is filed as Exhibit 14.1 hereto.

Interests of Experts and Counsel

Not required because this document is filed as an annual report.

Item 8: Financial Information

Consolidated Statements and Other Financial Information

Consolidated Financial Statements

The Financial Statements of this Annual Report on Form 20-F consist of the Consolidated Financial Statements including Notes 1 to 45 thereto, which are set forth as Part 2 of the Annual Report 2018, and, as described in Note 1 “Significant Accounting Policies and Critical Accounting Estimates” thereto in the third paragraph under “Basis of Accounting”, certain parts of the Management Report set forth as Part 1 of the Annual Report 2018. Such Consolidated Financial Statements have been audited by KPMG AG Wirtschaftsprüfungsgesellschaft, as described in their “Report of Independent Registered Public Accounting Firm” included in the Annual Report 2018.

Legal Proceedings

General. We and our subsidiaries operate in a legal and regulatory environment that exposes us to significant litigation risks. As a result, we are involved in litigation, arbitration and regulatory proceedings and investigations in Germany and in a number of jurisdictions outside Germany, including the United States. Please refer to Note 29 “Provisions” to the Consolidated Financial Statements for descriptions of certain significant legal proceedings. Additional legal proceedings that may have, or have had in the recent past, significant effects on our financial position or profitability are described below.

Bank Bill Swap Rate Claims. On August 16, 2016, a putative class action was filed in the US District Court for the Southern District of New York against Deutsche Bank and other defendants, bringing claims based on alleged collusion and manipulation in connection with the Australian Bank Bill Swap Rate (“BBSW”) on behalf of persons and entities that engaged in US-based transactions in BBSW-linked financial instruments from 2003 through the date on which the effects of the alleged unlawful conduct ceased. The complaint alleges that the defendants, among other things, engaged in money market transactions intended to influence the BBSW fixing, made false BBSW submissions, and used their control over BBSW rules to further the alleged misconduct. An amended complaint was filed on December 16, 2016. On November 26, 2018, the court partially granted defendants’ motions to dismiss the amended complaint, dismissing all claims against Deutsche Bank. On March 4, 2019, the court granted plaintiffs permission to file a second amended complaint.

Challenge of the General Meeting’s Resolution Not to Pay a Dividend for the 2015 Fiscal Year. In May 2016, Deutsche Bank AG’s General Meeting resolved that no dividend was to be paid to Deutsche Bank’s shareholders for the 2015 fiscal year. Some shareholders filed a lawsuit with the Regional Court Frankfurt am Main (Landgericht), challenging (among other things) the resolution on the grounds that Deutsche Bank was required by law to pay a minimum dividend in an amount equal to 4 % of Deutsche Bank’s share capital. In December 2016, the Regional Court ruled in favor of the plaintiffs. Deutsche Bank initially appealed the court’s decision. However, consistent with Deutsche Bank’s updated strategy, Deutsche Bank withdrew its appeal prior to Deutsche Bank’s 2017 General Meeting, as a result of which the challenged resolution became void. Deutsche Bank’s General Meeting in May 2017 resolved the payment of a dividend of approximately € 400 million from Deutsche Bank’s distributable profit for 2016 which amount contains a component reflecting the distributable profit carried forward from 2015 of approximately € 165 million. Such dividend was paid to the shareholders shortly after the annual General Meeting. The resolution was also challenged in court based on the argument that the way the decision was taken was not correct. On January 18, 2018, the Regional Court Frankfurt am Main dismissed the shareholder actions as regards the dividend resolution taken in May 2017. The plaintiffs have appealed to the Higher Regional Court Frankfurt am Main. A hearing took

place on January 29, 2019 and the court indicated its intention to hand down a decision on March 26, 2019.

CO2 Emission Rights. The Frankfurt am Main Office of Public Prosecution (the “OPP”) has investigated alleged value-added tax (VAT) fraud in connection with the trading of CO2 emission rights by certain trading firms, some of which also engaged in trading activity with Deutsche Bank. The OPP alleges that certain employees of Deutsche Bank knew that their counterparties were part of a fraudulent scheme to avoid VAT on transactions in CO2 emission rights, and it searched Deutsche Bank in April 2010 and December 2012.

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On June 13, 2016, the Regional Court Frankfurt am Main sentenced seven former Deutsche Bank employees for VAT evasion and for aiding and abetting VAT evasion in connection with their involvement in CO2 emissions trading. On May 15, 2018, the Federal Supreme Court (Bundesgerichtshof) handed down its decision in the appeal proceedings. The Federal Supreme Court partly granted the appeal of one former employee and referred the case back to the trial court. In relation to the other cases where appeal proceedings were pending, the Federal Supreme Court confirmed the trial court’s judgment, which meant that the judgment became final and binding and the cases are closed. The majority of the other investigations by the OPP against former and current employees which were ongoing have meanwhile been closed. In addition to the case which was referred back to the trial court, investigations remain ongoing against one current and one former employee.

Cum-ex Investigations and Litigations. Deutsche Bank has received inquiries from law enforcement authorities, including requests for information and documents, in relation to cum-ex transactions of clients. “Cum-ex” refers to trading activities in German shares around dividend record dates (trade date before and settlement date after dividend record date) for the purpose of obtaining German tax credits or refunds in relation to withholding tax levied on dividend payments including, in particular, transaction structures that have resulted in more than one market participant claiming such credit or refund with respect to the same dividend payment. Deutsche Bank is cooperating with the law enforcement authorities in these matters.

The Public Prosecutor in Cologne has been conducting a criminal investigation since August 2017 concerning two former employees of Deutsche Bank in relation to cum-ex transactions of certain former clients of the Bank. Deutsche Bank is a potential secondary participant pursuant to Section 30 of the German Law on Administrative Offences in this proceeding. Deutsche Bank is cooperating with this investigation.

In February 2018, Deutsche Bank received from the Federal Central Tax Office (Bundeszentralamt für Steuern) a demand of approximately € 49 million for tax refunds paid to a former custody client. Deutsche Bank had filed withholding tax refund claims through the electronic refund procedure (elektronisches Datenträgerverfahren) on behalf of the client in connection with the client’s cum-ex transactions. Deutsche Bank expects to receive a formal notice for the same amount in the near future.

By letter dated February 26, 2018, The Bank of New York Mellon SA/NV (“BNY”) informed Deutsche Bank of its intention to seek indemnification for potential cum-ex related tax liabilities incurred by BHF Asset Servicing GmbH (“BAS”) and/or Frankfurter Service Kapitalanlage-GmbH (“FSKAG”). Deutsche Bank had acquired BAS and FSKAG as part of the acquisition of Sal. Oppenheim in 2010 and sold them to BNY in the same year. BNY estimates the potential tax liability to amount to up to € 120 million.

On February 6, 2019, the Regional Court Frankfurt am Main (Landgericht) served Deutsche Bank with a claim by M.M.Warburg & CO Gruppe GmbH and M.M.Warburg & CO (AG & Co.) KGaA (together “Warburg”) in connection with cum-ex transactions of Warburg with a custody client of Deutsche Bank during 2007 to 2011. Warburg claims from Deutsche Bank indemnification against German taxes in relation to transactions conducted in the years 2010 and

2011. Further, Warburg claims compensation of unspecified damages relating to these transactions and declaratory relief that Deutsche Bank will have to indemnify Warburg against any potential future tax assessments for cum-ex transactions conducted in the years 2007 to 2009. According to Warburg's claim, the Hamburg Tax Office has claimed from Warburg German taxes of approximately € 42.7 million plus interest of approximately € 14.6 million for 2010 and German taxes of approximately € 4 million plus interest of approximately € 1.6 million for 2011. According to the claim, neither taxes nor interest have yet been assessed against Warburg for the years 2007 to 2009. Deutsche Bank estimates that for the years 2007 to 2009 the aggregate amount of German taxes and interest could be as high as approximately € 88.9 million and approximately € 45.9 million, respectively.

Deutsche Bank Shareholder Litigations. Deutsche Bank and certain of its current and former officers and management board members are the subject of a purported class action, filed in the US District Court for the Southern District of New York, asserting claims under Sections 10(b) and 20(a) of the US Securities Exchange Act of 1934 on behalf of persons who purchased or otherwise acquired securities of Deutsche Bank on a United States exchange or pursuant to other transactions within the United States between January 31, 2013 and July 26, 2016. Plaintiffs allege that Deutsche Bank's SEC Annual Reports on Form 20-F for the years 2012, 2013, 2014 and 2015 were materially false and misleading in failing to disclose (i) serious and systemic failings in controls against financing terrorism, money laundering, aiding organizations subject to international sanctions and committing financial crime and (ii) that the Bank's internal control over financial reporting and its disclosure controls and procedures were not effective. On February 21, 2017, Deutsche Bank and the individual defendants served at the time with the summons and complaint moved to dismiss the consolidated amended complaint. On June 28, 2017, the court granted the motion to dismiss as to all defendants, without leave to replead. On June 30, 2017, the court entered judgment dismissing the lawsuit. The plaintiffs appealed the court's decision. Following completion of briefing, the Court of Appeals held oral argument on March 28, 2018. On April 13, 2018, the Court of Appeals issued a Summary Opinion affirming the dismissal of the action.

Deutsche Bank and certain of its current and former officers and management board members are the subject of a purported class action, filed in the United States District Court for the Southern District of New York, asserting claims under Sections 10(b) and 20(a) of the Securities Exchange Act of 1934 on behalf of persons who purchased or otherwise acquired securities of Deutsche Bank on a United States exchange or pursuant to other transactions within the United States between March 20, 2017 and May 30, 2018. Plaintiffs allege that Deutsche Bank's SEC Annual Reports on Form 20-F for the years 2016 and 2017 and its quarterly interim reports on Form 6-K for calendar 2017 contained materially false and misleading statements regarding its business, operational and compliance policies and internal control environment. On January 25, 2019, the lead plaintiff filed an amended class action complaint. Deutsche Bank is defending the action.

Esch Funds Litigation. Prior to its acquisition by Deutsche Bank in 2010, Sal. Oppenheim jr. & Cie. AG & Co. KGaA ("Sal. Oppenheim") was involved in the marketing and financing of participations in closed end real estate funds. These funds were structured as partnerships under German law. Usually, Josef Esch Fonds-Projekt GmbH carried out the planning and project development in connection with the funds' investments. Sal. Oppenheim held an indirect interest in this company via a joint-venture. In relation to this business, a number of civil claims have been filed against Sal. Oppenheim. Some, but not all, of these claims are also directed against former managing partners of Sal. Oppenheim and other individuals. The investors are seeking to unwind their fund participation and to be indemnified against potential losses incurred in connection with the investment. The claims are based in part, on an alleged failure of Sal. Oppenheim to adequately disclose related risks and other material aspects important for the investors' investment decision. The claims brought against Sal. Oppenheim relate to investments in an amount of originally approximately € 1.1 billion. After certain claims have either been dismissed or settled, claims relating to investments in an amount of originally approximately € 6 million are still pending. Based on the facts of the individual

cases, some courts have decided in favor and some against Sal. Oppenheim. In some cases, appeals are pending. Currently, the aggregate amount claimed in the pending proceedings is approximately € 10 million .

KOSPI Index Unwind Matters. Following the decline of the Korea Composite Stock Price Index 200 (the “KOSPI 200”) in the closing auction on November 11, 2010 by approximately 2.7 %, the Korean Financial Supervisory Service (“FSS”) commenced an investigation and expressed concerns that the fall in the KOSPI 200 was attributable to a sale by Deutsche Bank of a basket of stocks, worth approximately € 1.6 billion, that was held as part of an index arbitrage position on the KOSPI 200. On February 23, 2011, the Korean Financial Services Commission, which oversees the work of the FSS, reviewed the FSS’ findings and recommendations and resolved to take the following actions: (i) to file a criminal complaint to the Korean Prosecutor’s Office for alleged market manipulation against five employees of Deutsche Bank group and Deutsche Bank’s subsidiary Deutsche Securities Korea Co. (DSK) for vicarious corporate criminal liability; and (ii) to impose a suspension of six months, commencing April 1, 2011 and ending September 30, 2011, of DSK’s business for proprietary trading of cash equities and listed derivatives and DMA (direct market access) cash equities trading, and the requirement that DSK suspend the employment of one named employee for six months. On August 19, 2011, the Korean Prosecutor’s Office announced its decision to indict DSK and four employees of Deutsche Bank group on charges of spot/futures-linked market manipulation. The criminal trial commenced in January 2012. On January 25, 2016, the Seoul Central District Court rendered guilty verdicts against a DSK trader and DSK. A criminal fine of KRW 1.5 billion (less than € 2.0 million) was imposed on DSK. The Court also ordered forfeiture of the profits generated on the underlying trading activity. The Group disgorged the profits on the underlying trading activity in 2011. The criminal trial verdicts against both the DSK trader and against DSK were overturned on appeal in a decision rendered by the Seoul High Court on December 12, 2018. The Korean Prosecutor’s Office has appealed the Seoul High Court decision.

In addition, a number of civil actions have been filed in Korean courts against Deutsche Bank and DSK by certain parties who allege they incurred losses as a consequence of the fall in the KOSPI 200 on November 11, 2010. First instance court decisions were rendered against the Bank and DSK in some of these cases starting in the fourth quarter of 2015. The outstanding claims known to Deutsche Bank have an aggregate claim amount of less than € 50 million (at present exchange rates).

Monte Dei Paschi. In March 2013, Banca Monte dei Paschi di Siena (“MPS”) initiated civil proceedings in Italy against Deutsche Bank alleging that Deutsche Bank assisted former MPS senior management in an accounting fraud on MPS, by undertaking repo transactions with MPS and “Santorini”, a wholly owned special-purpose vehicle of MPS, which helped MPS defer losses on a previous transaction undertaken with Deutsche Bank. Subsequently, in July 2013, the Fondazione Monte dei Paschi di Siena (“FMPS”), MPS’ largest shareholder, also commenced civil proceedings in Italy for damages based on substantially the same facts. In December 2013, Deutsche Bank reached an agreement with MPS to settle the civil proceedings and the transactions were unwound. The civil proceedings initiated by FMPS, in which damages of between € 220 million and € 381 million were claimed, were also recently settled upon payment by Deutsche Bank of € 17.5 million. FMPS’s separate claim filed in July 2014 against FMPS’s former administrators and a syndicate of 12 banks including Deutsche Bank S.p.A. for € 286 million continues to be pending before the first instance Florence courts.

A criminal investigation was launched by the Siena Public Prosecutor into the transactions entered into by MPS with Deutsche Bank and certain unrelated transactions entered into by MPS with other parties. Such investigation was moved in summer 2014 from Siena to the Milan Public Prosecutors as a result of a change in the alleged charges being investigated. On February 16, 2016, the Milan Public Prosecutors issued a request of committal to trial against Deutsche Bank and six current and former employees. The committal process concluded with a hearing on October 1, 2016, during which the Milan court committed all defendants in the criminal proceedings to trial. Deutsche Bank’s

potential exposure is for administrative liability under Italian Legislative Decree n. 231/2001 and for civil vicarious liability as an employer of current and former Deutsche Bank employees who are being criminally prosecuted. A verdict is not expected before summer 2019.

On May 22, 2018, CONSOB, the authority responsible for regulating the Italian financial markets, issued fines of € 100,000 each against the six current and former employees of Deutsche Bank who are individual defendants in the criminal proceedings. The six individuals were also banned from performing management functions in Italy and for Italian based institutions for three to six months each. No separate fine or sanction was imposed on Deutsche Bank but it is jointly and severally liable for the six current/former Deutsche Bank employees' fines. On June 14, 2018, Deutsche Bank and the six individuals filed an appeal in the Milan Court of Appeal challenging CONSOB's decision and one of the individuals sought a stay of enforcement of the fine against that individual. The stay was granted on July 21, 2018. The hearing of the appeal is scheduled for June 5, 2019 with a verdict expected by the end of 2019.

Pas-de-Calais Habitat. On May 31, 2012, Pas-de-Calais Habitat ("PDCH"), a public housing office, initiated proceedings before the Paris Commercial Court against Deutsche Bank in relation to four swap contracts entered into in 2006, restructured on March 19, 2007 and January 18, 2008 and subsequently restructured in 2009 and on June 15, 2010. PDCH asked the Court to declare the March 19, 2007 and January 18, 2008 swap contracts null and void, or terminated, or to grant damages to PDCH in an amount of approximately € 170 million on the grounds that, inter alia, Deutsche Bank committed fraudulent and deceitful acts, manipulated the LIBOR and EURIBOR rates which are used as a basis for calculating the sums due by PDCH under the swap contracts and breached its obligations to warn, advise and inform PDCH. In December 2018, Deutsche Bank and PDCH reached an agreement to settle these proceedings.

Pension Plan Assets. The Group sponsors a number of post-employment benefit plans on behalf of its employees. In Germany, the pension assets that fund the obligations under these pension plans are held by Benefit Trust GmbH. The German tax authorities are challenging the tax treatment of certain income received by Benefit Trust GmbH in the years 2010 to 2013 with respect to its pension plan assets. For the year 2010 Benefit Trust GmbH paid the amount of tax and interest assessed of € 160 million to the tax authorities and is seeking a refund of the amounts paid in litigation. For 2011 to 2013 the matter is stayed pending the outcome of the 2010 tax litigation. The amount of tax and interest under dispute for years 2011 to 2013, which also has been paid to the tax authorities, amounts to € 456 million. In March 2017, the lower fiscal court ruled in favor of Benefit Trust GmbH and in September 2017 the tax authorities appealed the decision to the German supreme fiscal court (Bundesfinanzhof). A decision by the supreme fiscal court is not expected for a number of years.

Precious Metals Investigations and Litigations. Deutsche Bank received inquiries from certain regulatory and law enforcement authorities, including requests for information and documents, pertaining to investigations of precious metals trading and related conduct. Deutsche Bank is cooperating with these investigations, and engaging with relevant authorities, as appropriate. On January 29, 2018, the Bank entered into a US\$ 30 million settlement with the US Commodity Futures Trading Commission ("CFTC") to resolve the CFTC's investigation concerning spoofing, manipulation and attempted manipulation in precious metals futures, as well as the manipulation and attempted manipulation of stop loss orders. The order requires that the Bank, among other things, maintain systems and controls reasonably designed to detect spoofing, and maintain training regarding spoofing, manipulation and attempted manipulation. The order also requires the Bank to continue to cooperate with the CFTC.

Deutsche Bank is a defendant in two consolidated class action lawsuits pending in the US District Court for the Southern District of New York. The suits allege violations of US antitrust law, the US Commodity Exchange Act and related state law arising out of the alleged manipulation of gold and silver prices through participation in the Gold and Silver Fixes, but do not specify the damages sought. Deutsche Bank has reached agreements to settle the gold action for US\$ 60 million and the silver action for US \$ 38 million. The agreements remain subject to final court approval.

In addition, Deutsche Bank is a defendant in Canadian class action proceedings in the provinces of Ontario and Quebec concerning gold and silver. Each of the proceedings seeks damages for alleged violations of the Canadian

Competition Act and other causes of action. Deutsche Bank has reached agreements to settle these actions. The agreements remain subject to court approval, and the amounts are not material to the Bank.

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Pre-Release ADRs. Deutsche Bank and certain affiliates have received inquiries from certain European regulatory, tax and law enforcement authorities, including requests for documents and information, with respect to American Depositary Receipts (ADRs), including ADRs that have been issued on a "pre-release" basis ("pre-release ADRs"). Deutsche Bank is cooperating with these inquiries.

On July 20, 2018, the US Securities and Exchange Commission (SEC) announced that it had reached civil settlements with Deutsche Bank Trust Company Americas ("DBTCA") and Deutsche Bank Securities Inc. ("DBSI") in this matter. The settlements resolved SEC claims that DBTCA was negligent in issuing pre-release ADRs under certain circumstances, and that DBSI failed reasonably to supervise employees who were negligent in borrowing and lending pre-release ADRs. The settlements required DBTCA and DBSI to pay a combined financial sanction of approximately US\$ 75 million, and the SEC ordered DBTCA to cease and desist from committing or causing any violations and any future violations of Section 17(a)(3) of the Securities Act of 1933.

Regula Ltd. Clients AML Investigations. On November 29, 2018, based on a search warrant issued by the Local Court (Amtsgericht) in Frankfurt, Deutsche Bank's offices in Frankfurt were searched by German law enforcement authorities on the suspicion that two employees – and as-yet unidentified further individuals – deliberately abstained from issuing suspicious activity reports (SARs) in a timely manner and aided and abetted money laundering in connection with our offshore trust business. The physical searches ended on November 30, 2018. Nevertheless, the search remains formally open until Deutsche Bank has completed additional data deliveries. The Bank is cooperating in the investigation, as has been publicly acknowledged by the Frankfurt Public Prosecutor's Office.

Transfer of Lease Assets. In December 2017, a claim for damages was filed with the Regional Court Frankfurt am Main against Deutsche Bank AG in the amount of approximately € 155 million (excluding interest). In 2006, Deutsche Bank AG (indirectly, through a special-purpose vehicle) entered into transactions according to which the plaintiff transferred certain lease assets to the special-purpose vehicle against, among others things, receipt of a preference dividend. The plaintiff alleges that Deutsche Bank had entered into an agreement with it under which Deutsche Bank provided flawed contractual documentation as a result of which the German tax authorities have disallowed the plaintiff's expected tax savings. At a hearing in September 2018, the court indicated that it intended to dismiss the claims. The plaintiff filed a post-hearing brief arguing that the claims should not be dismissed. In December 2018, the court issued an advisory order according to which Deutsche Bank AG is required to respond to the plaintiff's brief, and scheduled a further hearing for the end of June 2019.

Vestia. In December 2016, Stichting Vestia, a Dutch housing association, commenced proceedings against Deutsche Bank in England. The proceedings relate to derivatives entered into between Stichting Vestia and Deutsche Bank between 2005 and 2012. Stichting Vestia alleges that certain of the transactions entered into by it with Deutsche Bank should be set aside on the grounds that they were not within its capacity and/or were induced by the bribery of Vestia's treasurer by an intermediary involved in those transactions. The sums claimed by Stichting Vestia are made up of different elements, some of which have not yet been quantified. The amount claimed at this stage ranges between € 757 million and € 837 million, plus compound interest. The trial is due to commence on May 9, 2019 and is scheduled to last for 8 to 10 weeks. Deutsche Bank is defending against the claim.

Dividend Policy

For 2018, the Management Board will propose to the General Meeting to pay a dividend of € 0.11 per share. In 2015, we did not pay a dividend. In 2016, we paid a dividend of € 0.19 per share in the aggregate out of the distributable profit for 2016, reflecting the pay out of € 0.08 per share eligible for a dividend for the 2015 financial year out of the distributable profit carried forward from 2015 of approximately € 165 million and a dividend of € 0.11 per share eligible for a dividend for the 2016 financial year from the remaining distributable profit for 2016. In 2017, we paid a dividend of € 0.11 per share. Historically, however, we have paid dividends at higher levels, including dividends per share of € 0.75 for 2014. However, we cannot assure investors that we will pay dividends as for 2014 or previous years, or at any other level, or at all, in any future period. If the company is not profitable, we may not pay dividends at all.

Furthermore, if Deutsche Bank AG fails to meet the regulatory capital adequacy requirements under CRR/CRD 4 (including individually imposed capital requirements (so-called “Pillar 2” requirements) and the combined buffer requirement), it may be prohibited from making, and the ECB or the BaFin may suspend or limit, the payment of dividends. In addition, the ECB expects banks to meet “Pillar 2” guidance. If Deutsche Bank AG operates or expects to operate below “Pillar 2” guidance, the ECB will review the reasons why the Bank’s capital level has fallen or is expected to fall and may take appropriate and proportionate measures in connection with such shortfall. Any such measures might have an impact on Deutsche Bank AG’s willingness or ability to pay dividends. For further information on regulatory capital adequacy requirements and the powers of Deutsche Bank AG’s regulators to suspend dividend payments, see “Item 4: Information on the Company – Regulation and Supervision – Capital Adequacy Requirements” and “– Investigative and Enforcement Powers.”

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Under German law, Deutsche Bank AG’s dividends are based on the unconsolidated results of Deutsche Bank AG as prepared in accordance with German accounting rules. Deutsche Bank AG’s Management Board, which prepares the annual financial statements of Deutsche Bank AG on an unconsolidated basis, and its Supervisory Board, which reviews them, first allocate part of Deutsche Bank AG’s annual surplus (if any) to Deutsche Bank AG’s statutory reserves and to any losses carried forward, as it is legally required to do. They then allocate the remainder between other revenue reserves (or retained earnings) and balance sheet profit. They may allocate up to one-half of this remainder to other revenue reserves, and must allocate at least one-half to balance sheet profit. A profit distribution from balance sheet profit is only permitted to the extent that the balance sheet profit plus distributable earnings exceeds potential dividend blocking items, which consist of deferred tax assets, self-developed software and unrealized gains on plan assets, all net of respective deferred tax liabilities.

Deutsche Bank AG then distributes up to the full amount of the balance sheet profit not subject to dividend blocking of Deutsche Bank AG if the annual General Meeting so resolves. The annual General Meeting may resolve a non-cash distribution instead of, or in addition to, a cash dividend. However, Deutsche Bank AG is not legally required to distribute its balance sheet profit to its shareholders to the extent that it has issued participatory rights (Genussrechte) or granted a silent participation (stille Gesellschaft) that accord their holders the right to a portion of Deutsche Bank AG’s distributable profit.

German corporate law provides that, should the annual General Meeting resolve to carry forward profits or to allocate profits to the reserves, shareholders may contest the resolution of the General Meeting if such carrying forward or allocation is not, on the basis of a reasonable commercial assessment, deemed necessary to ensure the viability or economic resilience of the company and the shareholders do not receive a minimum dividend in the amount equal to 4 % of the share capital. On these grounds, shareholders challenged the resolution of the 2016 annual General Meeting not to pay a dividend for 2015. Meanwhile, according to Section 10 (5) of the German Banking Act

(“Kreditwesengesetz”) as amended in July 2017 this provision of German corporate law is no longer applicable to credit institutions subject to the CRR, i.e. the minimum dividend requirement no longer applies to Deutsche Bank AG.

Deutsche Bank AG declares dividends by resolution of the annual General Meeting and pays them (if any) once a year. Dividends approved at a General Meeting are payable on the third business day after that meeting, unless a later date has been determined at that meeting or by the Articles of Association. In accordance with the German Stock Corporation Act, the record date for determining which holders of Deutsche Bank AG’s ordinary shares are entitled to the payment of dividends, if any, or other distributions whether cash, stock or property, is the date of the General Meeting at which such dividends or other distributions are declared.

Significant Changes

Except as otherwise stated in this document, there have been no significant changes subsequent to December 31, 2018.

Item 9: The Offer and Listing

Offer and Listing Details and Markets

Our share capital consists of ordinary shares issued in registered form without par value. Under German law, shares without par value are deemed to have a “nominal” value equal to the total amount of share capital divided by the number of shares. Our shares have a nominal value in this sense of € 2.56 per share.

The principal trading market for our shares is the Frankfurt Stock Exchange, where it trades under the symbol DBK. Our shares are also traded on the six other German stock exchanges (Berlin, Duesseldorf, Hamburg, Hanover, Munich and Stuttgart, where on each exchange it also trades under the symbol DBK), on the Eurex and the New York Stock Exchange, where it trades under the symbol DB.

We maintain a share register in Frankfurt am Main and, for the purposes of trading our shares on the New York Stock Exchange, a share register in New York.

All shares on German stock exchanges trade in euros, and all shares on the New York Stock Exchange trade in U.S. dollars.

You should not rely on our past share performance as a guide to our future share performance.

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Plan of Distribution

Not required because this document is filed as an annual report.

Selling Shareholders

Not required because this document is filed as an annual report.

Dilution

Not required because this document is filed as an annual report.

Expenses of the Issue

Not required because this document is filed as an annual report.

Item 10: Additional Information

Share Capital

Not required because this document is filed as an annual report.

Memorandum and Articles of Association

The following is a summary of certain information relating to certain provisions of our Articles of Association, our share capital and German law. This summary is not complete and is qualified by reference to our Articles of Association and German law in effect at the date of this filing. Copies of our Articles of Association are publicly available at the Commercial Register (Handelsregister) in Frankfurt am Main, and an English translation is filed as Exhibit 1.1 to this Annual Report.

Our Business Objectives

Section 2 of our Articles of Association sets out the objectives of our business:

- to transact all aspects of banking business;
- to provide financial and other services; and
- to promote international economic relations.

Our Articles of Association permit us to pursue these objectives directly or through subsidiaries and affiliated companies.

Our Articles of Association also provide that, to the extent permitted by law, we may transact all business and take all steps that appear likely to promote our business objectives. In particular, we may:

- acquire and dispose of real estate;
- establish branches in Germany and abroad;
- acquire, administer and dispose of participations in other enterprises; and
- conclude intercompany agreements (Unternehmensverträge).

Supervisory Board and Management Board

For more information on our Supervisory Board and Management Board, see “Item 6: Directors, Senior Management and Employees.”

Voting Rights and Shareholders' Meetings

Each of our shares entitles its registered holder to one vote at our General Meeting. Our Annual General Meeting takes place within the first eight months of our fiscal year. Pursuant to our Articles of Association, we may hold the meeting in Frankfurt am Main, Düsseldorf or any other German city with over 500,000 inhabitants. Unless a shorter period is permitted by law, we must give the notice convening the General Meeting at least 30 days before the last day on which shareholders can register their attendance of the General Meeting (which is the fifth day immediately preceding that General Meeting). Shorter periods apply if the General Meeting is called to adopt a resolution on a capital increase in the context of early intervention measures pursuant to the Act on the Recovery and Resolution of Institutions and Financial Groups (Gesetz zur Sanierung und Abwicklung von Instituten und Finanzgruppen). We are required to include details regarding the shareholder attendance registration process and the issuance of admission cards in our invitation to the General Meeting.

The Management Board or the Supervisory Board may also call an extraordinary General Meeting. Shareholders holding in the aggregate at least 5 % of the nominal value of our share capital may also request that such a meeting be called.

According to our Articles of Association our shares are issued in the form of registered shares. For purposes of registration in the share register, all shareholders are required to notify us of the number of shares they hold and, in the case of natural persons, of their name, address and date of birth and, in the case of legal persons, of their registered name, business address and registered domicile. Both being registered in our share register and the timely registration for attendance of the General Meeting constitute prerequisite conditions for any shareholder's attendance and exercise of voting rights at the General Meeting. Shareholders may register their attendance of a General Meeting with the Management Board (or as otherwise designated in the invitation) by written notice or electronically, no later than the fifth day immediately preceding the date of that General Meeting. Any shareholders who have failed to comply with certain notification requirements summarized under “Notification Requirements” below are precluded from exercising any rights attached to their shares, including voting rights.

Under German law, upon our request a registered shareholder must inform us whether that shareholder owns the shares registered in its name or whether that shareholder holds the shares for any other person as a nominee shareholder. Both the nominee shareholder and the person for whom the shares are held have an obligation to provide the same personal data as required for registration in the share register with respect to the person for whom the shares are held. For so long as a registered shareholder does not provide the requested information as to its holding of the shares or, in the case of nominee shareholding, the required information about the person for whom the shares are held has not been provided, the shares held by the registered shareholder carry no voting rights.

Shareholders may appoint proxies to represent them at General Meetings. As a matter of German law, a proxy relating to voting rights granted by shares may be revoked at any time.

As a foreign private issuer, we are not required to file a proxy statement under US securities law. The proxy voting process for our shareholders in the United States is substantially similar to the process for publicly held companies incorporated in the United States.

The Annual General Meeting normally adopts resolutions on the following matters:

- appropriation of distributable balance sheet profits (Bilanzgewinn) from the preceding fiscal year;
- formal ratification of the acts (Entlastung) of the members of the Management Board and the members of the Supervisory Board in the preceding fiscal year; and
- appointment of independent auditors for the current fiscal year.

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A simple majority of votes cast is generally sufficient to approve a measure, except in cases where a greater majority is otherwise required by our Articles of Association or by law. Under the German Stock Corporation Act and the German Transformation Act (Umwandlungsgesetz), certain resolutions of fundamental importance require a majority of at least 75 % of the share capital represented at the General Meeting adopting the resolution, in addition to a majority of the votes cast. Such resolutions include the following matters, among others:

- amendments to our Articles of Association changing our business objectives;
- capital increases that exclude subscription rights;
- capital reductions;
- creation of authorized or conditional capital;
- our dissolution;
- “transformations” under the German Transformation Act such as mergers, spin-offs and changes in our legal form;
- transfer of all our assets;
- integration of another company; and
- intercompany agreements (in particular, domination and profit-transfer agreements).

Under certain circumstances, such as when a resolution violates our Articles of Association or the German Stock Corporation Act, shareholders may file a shareholder action with the appropriate Regional Court (Landgericht) in Germany to set aside resolutions adopted at the General Meeting.

Under German law, the rights of shareholders as a group can be changed by amendment of the company's articles of association. Any amendment of our Articles of Association requires a resolution of the General Meeting. The authority to amend our Articles of Association, insofar as such amendments merely relate to the wording, such as changes of the share capital as a result of the issuance of shares from authorized capital, has been assigned to our Supervisory Board by our Articles of Association. Pursuant to our Articles of Association, the resolutions of the General Meeting are taken by a simple majority of votes and, insofar as a majority of capital stock is required, by a simple majority of capital stock, except where law or our Articles of Association determine otherwise. The rights of individual shareholders can only be changed with their consent. Amendments to the Articles of Association become effective upon their registration in the Commercial Register.

Share Register

We maintain a share register with Link Market Services GmbH and our New York transfer agent, pursuant to an agency agreement between us and Link Market Services GmbH and a sub-agency agreement between Link Market Services GmbH and the New York transfer agent.

Our share register will be open for inspection by shareholders during normal business hours at our offices at Taunusanlage 12, 60325 Frankfurt am Main, Germany. The share register generally contains each shareholder's surname, first name, date of birth, address and the number or the quantity of our shares held. Shareholders may prevent their personal information from appearing in the share register by holding their securities through a bank or

custodian. Although the shareholder would remain the beneficial owner of the securities, only the bank's or custodian's name would appear in the share register.

Dividend Rights

For a summary of our dividend policy and legal basis for dividends under German law, see “Item 8: Financial Information – Dividend Policy.”

Increases in Share Capital

German law and our Articles of Association permit us to increase our share capital in any of three ways:

- Resolution by our General Meeting authorizing the issuance of new shares.
- Resolution by our General Meeting authorizing the Management Board, subject to the approval of the Supervisory Board, to issue new shares up to a specified amount (no more than 50 % of existing share capital) within a specified period, which may not exceed five years. This is referred to as authorized capital (genehmigtes Kapital).
- Resolution by our General Meeting authorizing the issuance of new shares up to a specified amount (no more than 50 % of existing share capital) for specific purposes, such as for employee stock options, for use as consideration in a merger or to issue to holders of convertible bonds or other convertible securities. This is referred to as conditional capital (bedingtes Kapital).

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The issuance of new ordinary shares by resolution of the General Meeting requires the simple majority of the votes cast and of the share capital represented at the General Meeting. Resolutions of the General Meeting concerning the creation of authorized or conditional capital require the simple majority of the votes cast and a majority of at least 75 % of the share capital represented at the General Meeting.

Liquidation Rights

The German Stock Corporation Act requires that if we are liquidated, any liquidation proceeds remaining after the payment of all our liabilities will be distributed to our shareholders in proportion to their shareholdings.

Preemptive Rights

In principle, holders of our shares have preemptive rights allowing them to subscribe any shares, bonds convertible into, or attached warrants to subscribe for, our shares or participatory certificates we issue. Such preemptive rights exist in proportion to the number of shares currently held by the shareholder. Preemptive rights of shareholders may be excluded with respect to any capital increase, however, as part of the resolution by the General Meeting on such capital increase. Such a resolution by the General Meeting on a capital increase that excludes the shareholders' preemptive rights with respect thereto requires both a majority of the votes cast and a majority of at least 75 % of the share capital represented at the General Meeting. A resolution to exclude preemptive rights requires that the proposed exclusion is expressly disclosed in the agenda to the General Meeting and that the Management Board presents the reasons for the exclusion to the shareholders in a written report. Under the German Stock Corporation Act, preemptive rights may in particular be excluded with respect to capital increases not exceeding 10 % of the existing share capital with an issue price payable in cash not significantly below the stock exchange price at the time of issuance. In addition, shareholders may, in a resolution by the General Meeting on authorized capital, authorize the Management

Board to exclude the preemptive rights with respect to newly issued shares from authorized capital in specific circumstances set forth in the resolution.

Shareholders are generally permitted to transfer their preemptive rights. Preemptive rights may be traded on one or more German stock exchanges for a limited number of days prior to the final day the preemptive rights can be exercised.

Notices and Reports

We publish notices pertaining to our shares and the General Meeting in the electronic German Federal Gazette (Bundes- anzeiger) and, when so required, in at least one national newspaper designated for exchange notices.

We send our New York transfer agent, through publication or otherwise, a copy of each of our notices pertaining to any General Meeting, any adjourned General Meeting or our actions with respect to any cash or other distributions or the offering of any rights. We provide such notices in the form given or to be given to our shareholders. Our New York transfer agent is requested to arrange for the mailing of such notices to all shareholders registered in the New York registry.

We will make all notices we send to shareholders available at our principal office for inspection by shareholders. Link Market Services GmbH and our New York transfer agent will send copies of all notices pertaining to General Meetings to all registered shareholders. Link Market Services GmbH and our New York transfer agent will send copies of other notices or information material, such as quarterly reports or shareholder letters, to those registered shareholders who have requested to receive such notices or information material.

Charges of Transfer Agents

We pay Link Market Services GmbH and our New York transfer agent customary fees for their services as transfer agents and registrars. Our shareholders will not be required to pay Link Market Services GmbH or our New York transfer agent any fees or charges in connection with their transfers of shares in the share register. Our shareholders will also not be required to pay any fees in connection with the conversion of dividends from euros to US dollars.

Liability of Transfer Agents

Neither Link Market Services GmbH nor our New York transfer agent will be liable to shareholders if prevented or delayed by law, or any circumstances beyond their control, from performing their obligations as transfer agents and registrars.

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Notification Requirements

Disclosure of Interests in a Listed Stock Corporation

Disclosure Obligations under the German Securities Trading Act

Deutsche Bank AG, as a listed company, and its shareholders are subject to the shareholding disclosure obligations under the German Securities Trading Act (Wertpapierhandelsgesetz). Pursuant to the German Securities Trading Act, any shareholder whose voting interest in a listed company like Deutsche Bank AG, through acquisition, sale or by other means, reaches, exceeds or falls below a 3 %, 5 %, 10 %, 15 %, 20 %, 25 %, 30 %, 50 % or 75 % threshold must

notify us and the BaFin of its current aggregate voting interest in writing and without undue delay, but at the latest within four trading days. In connection with this requirement, the German Securities Trading Act contains various provisions regarding the attribution of voting rights to the person who actually controls the voting rights attached to the shares.

Furthermore, the voting rights attached to a third party's shares are attributed to a shareholder if the shareholder coordinates its conduct concerning the listed company with the third party (so-called "acting in concert") either through an agreement or other means. Acting in concert is deemed to exist if the parties coordinate their voting at the listed company's general meeting or, outside the general meeting, coordinate their actions with the goal of significantly and permanently modifying the listed company's corporate strategy. Each party's voting rights are attributed to each of the other parties acting in concert.

Shareholders failing to comply with their notification obligations are prevented from exercising any rights attached to their shares (including voting rights and the right to receive dividends) until they have complied with the notification requirements. If the failure to comply with the notification obligations specifically relates to the size of the voting interest in the Deutsche Bank AG and is the result of willful or grossly negligent conduct, the suspension of shareholder rights is – subject to certain exceptions in case of an incorrect notification deviating no more than 10 % from the actual percentage of voting rights – extended by a six-month period commencing upon the submission of the required notification.

Except for the 3 % threshold, similar notification obligations exist for reaching, exceeding or falling below the thresholds described above when a person holds, directly or indirectly, certain instruments other than shares. This applies to instruments which grant upon maturity an unconditional right to acquire existing voting shares of Deutsche Bank AG, a discretionary right to acquire such shares, as well as to instruments that refer to such shares and have an economic effect similar to that of the aforementioned instruments, irrespective of whether such instruments are physically or cash-settled. These instruments include, for example, transferable securities, options, futures contracts and swaps. Voting rights to be attributed to a person based on any such instrument will generally be aggregated with the person's other voting rights deriving from shares or other instruments.

Notice must be given without undue delay, but within four trading days at the latest. The notice period commences as soon as the person obliged to notify knows, or, under the circumstances should know, that his or her voting rights reach, exceed or fall below any of the abovementioned relevant thresholds, but in any event no later than two trading days after reaching, exceeding or falling below the threshold. Only in case that the voting rights reach, exceed or fall below any of the thresholds as a result of an event affecting all voting rights, the notice period might commence at a later stage. Deutsche Bank AG must publish the foregoing notifications without undue delay, but no later than within three trading days after their receipt, and report such publication to the BaFin. Furthermore, the Deutsche Bank AG must publish a notification in case of any increase or decrease of the total number of voting rights without undue delay, but within two trading days at the latest, and such notification must be reported to the BaFin and forwarded to the German Company Register (Unternehmensregister). An exception applies where the increase of the total number of voting rights is due to the issue of new shares from conditional capital. In this case, Deutsche Bank AG must publish the increase at the end of the month in which it occurred. However, such increase must also be notified without undue delay, but within two trading days at the latest, where any other increase or decrease of the total number of voting rights triggers the aforementioned notification requirement.

Non-compliance with the disclosure requirements regarding shareholdings and holdings of other instruments may result in a significant fine imposed by the BaFin. In addition, the BaFin publishes, on its website, sanctions imposed and measures taken indicating the person or entity responsible and the nature of the breach (so-called "naming and shaming").

Shareholders whose voting rights reach or exceed thresholds of 10 % of the voting rights in a listed company, or higher thresholds, are obliged to inform the company within 20 trading days of the purpose of their investment and the

origin of the funds used for such investment, unless the articles of association of the listed company provide otherwise. Our Articles of Association do not contain such a provision.

Disclosure Obligations under the German Securities Acquisition and Takeover Act

Pursuant to the German Securities Acquisition and Takeover Act (Wertpapiererwerbs- und Übernahmegesetz), any person whose voting interest reaches or exceeds 30 % of the voting shares of a listed stock corporation must, within seven calendar days, publish this fact (including the percentage of its voting rights) on the Internet and by means of an electronically operated financial information dissemination system. In addition, the person must subsequently make a mandatory public tender offer within four weeks to all shareholders of the listed company unless an exemption has been granted. The German Securities Acquisition and Takeover Act contains a number of provisions intended to ensure that shareholdings are attributed to those persons who actually control the voting rights attached to the shares. The provisions regarding coordinated conduct as part of the German Securities Acquisition and Takeover Act (so-called “acting in concert”) and the rules on the attribution of voting rights attached to shares of third parties are the same as the statutory securities trading provisions described above under “Disclosure Obligations under the German Securities Trading Act” except with respect to voting rights of shares underlying instruments whose holders are vested with the right to unilaterally acquire existing voting shares of the listed company or voting rights which may be acquired on the basis of instruments with similar economic effect. If a shareholder fails to provide notice on reaching or exceeding the 30 % threshold, or fails to make a public tender offer, the shareholder will be precluded from exercising any rights associated with its shares (including voting and dividend rights) until it has complied with the requirements under the German Securities Acquisition and Takeover Act. In addition, non-compliance with the disclosure requirement may result in a fine.

Disclosure of Participations in a Credit Institution

The German Banking Act (Kreditwesengesetz) requires any person intending to acquire, alone or acting in concert with another person, a qualifying holding (bedeutende Beteiligung) in a credit or financial services institution to notify the BaFin and the Bundesbank without undue delay and in writing of the intended acquisition. A qualifying holding is a direct or indirect holding in an undertaking which represents 10 % or more of the capital or voting rights or which makes it possible to exercise a significant influence over the management of such undertaking. The required notice must contain information demonstrating, among other things, the reliability of the person or, in the case of a corporation or other legal entity, the reliability of its directors and officers.

A person holding a qualifying holding shall also notify the BaFin and the Bundesbank without undue delay and in writing if he intends to increase the amount of the qualifying holding up to or beyond the thresholds of 20 %, 30 % or 50 % of the voting rights or capital or in such way that the institution comes under such person’s control or if such person intends to reduce the participation below 10 % or below one of the other thresholds described above.

The BaFin will have to confirm the receipt of a complete notification within two working days in writing to the proposed acquirer. Within a period of 60 working days from the BaFin’s written confirmation that a complete notification has been received (assessment period), the BaFin will review and, in accordance with Council Regulation (EU) No 1024/2013 of October 15, 2013 conferring specific tasks on the European Central Bank concerning policies relating to the prudential supervision of credit institutions, forward the notification and a proposal for a decision whether or not to object to the acquisition to the ECB. The ECB will decide whether or not to object to the acquisition on the basis of the applicable assessment criteria. Within the assessment period the ECB may prohibit the intended acquisition in particular if there appears to be reason to assume that the acquirer or its directors and officers are not reliable or that the acquirer is not financially sound, that the participation would impair the effective supervision of the relevant credit institution, that a prospective managing director (Geschäftsleiter) is not reliable or not qualified, that

money laundering or financing of terrorism has occurred or been attempted in connection with the intended acquisition, or that there would be an increased risk of such illegal acts as a result of the intended acquisition. During the assessment period the BaFin may request further information necessary for its or the ECB's assessment. Generally, such a request delays the expiration of the assessment period by up to 30 business days. If the information submitted is incomplete or incorrect the ECB may prohibit the intended acquisition.

If a person acquires a qualifying holding despite such prohibition or without making the required notification, the competent authority may prohibit the person from exercising the voting rights attached to the shares. In addition, non-compliance with the disclosure requirement may result in the imposition of a fine in accordance with statutory provisions. Moreover, the competent authority may order that any disposition of the shares requires its approval and may ultimately appoint a trustee to exercise the voting rights attached to the shares or to sell the shares to the extent they constitute a qualifying holding.

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Review of Acquisition of 25 % or more by the German Federal Ministry of Economics and Technology

Pursuant to the German Foreign Trade Act (Außenwirtschaftsgesetz) and the German Foreign Trade Regulation (Außenwirtschaftsverordnung), the direct or indirect acquisition of 25 % or more of the voting rights in a German company by investors from outside the European Union and the European Free Trade Association (Iceland, Liechtenstein, Norway and Switzerland) or by entities which are owned by 25 % or more by investors from outside the aforementioned region may be reviewed by the German Federal Ministry of Economics and Technology. If the Ministry determines that the acquisition poses a threat to the public policy or public security of Germany, it may impose conditions on or suspend the acquisition or require that it is unwound. The conclusion of an acquisition contract for critical infrastructure and security-related technologies has to be notified to the German Federal Ministry of Economics and Technology in writing. The decision to review an acquisition must be made within three months following the Ministry's knowledge of the conclusion of the contract, of the publication of the decision to launch a take-over bid or of the publication of the acquisition of control. The review must be completed within four months following receipt of the complete acquisition documents. A review is precluded if more than 5 years have passed since the acquisition. The acquirer may seek pre-clearance of a proposed acquisition from the Federal Ministry of Economics and Technology.

EU Short Selling Regulation (ban on naked short selling)

Regulation (EU) No 236/2012 of the European Parliament and of the Council of March 14, 2012 on short selling and certain aspects of credit default swaps (the "EU Short Selling Regulation") came into force on November 1, 2012. The EU Short Selling Regulation, the regulations adopted by the EU Commission implementing it, and the German act implementing the EU Short Selling Regulation replace the previously applicable German federal provisions governing the ban on naked short selling of shares and certain debt securities. (Short sales are sales of securities that the seller does not own, with the intention of buying back an identical security at a later point in time in order to be able to deliver the security. A short sale is "naked" when the seller has not borrowed the securities at the time of the short sale, or ensured they can be borrowed.) Under the EU Short Selling Regulation, short sales of shares are permitted only under certain conditions. Significant net short positions in shares must be reported to the BaFin and, if a certain threshold is exceeded, they must also be publicly disclosed. Net short positions are calculated by netting the long and short positions held by a natural or legal person in the issued capital of the company concerned. The details are set forth in the EU Short Selling Regulation and the regulations adopted by the EU Commission implementing it. In certain situations described in greater detail in the EU Short Selling Regulation, the BaFin is permitted to limit short

selling and comparable transactions.

Disclosure of Transactions of Managers

Art. 19 of Regulation (EU) No 596/2014 of the European Parliament and of the Council of April 16, 2014 on market abuse (the “EU Market Abuse Regulation”) requires persons with management responsibilities (“Managers”) in a listed company like Deutsche Bank AG to notify the company and the BaFin of their own transactions in shares or debt instruments of the company or financial instruments based thereon, in particular derivatives. Such notifications must be made promptly and no later than three business days after the date of the transaction. The notification obligation also applies to persons who are closely associated with a Manager. The obligation does not apply if the aggregate annual transactions by a Manager or persons with whom he or she is closely associated do not, individually, exceed an amount of € 5,000.00 through the end of a calendar year. The BaFin may decide to increase this threshold up to € 20,000.00.

Deutsche Bank AG is required to promptly publish any notification received but in any case no later than three business days after the transaction. The publication must be made in a manner which enables fast access to this information on a non-discriminatory basis in accordance with the implementing standards published by the European Securities and Markets Authority. Furthermore, Deutsche Bank AG must without undue delay notify the BaFin and forward the notification to the Company Register (Unternehmensregister). For the purposes of the EU Market Abuse Regulation, the following persons are deemed to be a Manager: members of management, administrative or supervisory bodies of Deutsche Bank AG as well as senior executives who are not such members but who have regular access to inside information relating directly or indirectly to the Company and who have power to take managerial decisions affecting the future developments and business prospects of the Company. The following persons are deemed to be closely associated with a Manager: spouses, registered civil partners (eingetragene Lebenspartner), dependent children and other relatives who at the time of the transaction requiring notification have lived in the same household with the Manager for at least one year. Legal entities for which the aforementioned persons have management responsibilities are also subject to the notification requirement. The aforementioned provisions also apply to legal entities, companies and institutions directly or indirectly controlled by a Manager or by a person closely associated with a Manager, which have been founded to the benefit of such a person, or whose economic interests correspond to a considerable extent to those of such a person. Non-compliance with the notification requirements may result in a fine.

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Material Contracts

In the usual course of our business, we enter into numerous contracts with various other entities. We have not, however, entered into any material contracts outside the ordinary course of our business within the past two years.

Exchange Controls

As in other member states of the European Union, regulations issued by the competent European Union authorities to comply with United Nations resolutions have caused freeze orders on assets of certain legal and natural persons designated in such regulations. In addition, the European Union maintained a wide range of autonomous economic and financial sanctions on Iran. While all nuclear-related economic and financial EU sanctions against Iran were repealed on January 16, 2016, some restrictions remain in force.

With some exceptions, corporations or individuals residing in Germany are required to report to the Bundesbank any payment received from, or made to or for the account of, a nonresident corporation or individual that exceeds € 12,500

(or the equivalent in a foreign currency). This reporting requirement is for statistical purposes.

Subject to the above-mentioned exceptions, there are currently no German laws, decrees or regulations that would prevent the transfer of capital or remittance of dividends or other payments to our shareholders who are not residents or citizens of Germany.

There are also no restrictions under German law or our Articles of Association concerning the right of nonresident or foreign shareholders to hold our shares or to exercise any applicable voting rights. Where the investment reaches or exceeds certain thresholds, however, certain reporting obligations apply and the investment may become subject to review by the BaFin, the European Central Bank and other competent authorities. For more information see “Item 10: Additional Information – Notification Requirements”.

Taxation

The following is a general summary of material German and United States federal income tax consequences of the ownership and disposition of shares for a resident of the United States for purposes of the income tax convention between the United States and Germany (the “Treaty”) who is fully eligible for benefits under the Treaty. A U.S. resident will generally be entitled to Treaty benefits if it is:

- the beneficial owner of shares (and of the dividends paid with respect to the shares);
- an individual resident of the United States, a U.S. corporation, or a partnership, estate or trust to the extent its income is subject to taxation in the United States in its hands or in the hands of its partners or beneficiaries;
- not also a resident of Germany for German tax purposes; and
- not subject to “anti-treaty shopping” articles under German domestic law or the Treaty that apply in limited circumstances.

The Treaty benefits discussed below generally are not available to shareholders who hold shares in connection with the conduct of business through a permanent establishment in Germany. The summary does not discuss the treatment of those shareholders.

The summary does not purport to be a comprehensive description of all of the tax considerations that may be relevant to any particular shareholder, including tax considerations that arise from rules of general application or that are generally assumed to be known by shareholders. In particular, the summary deals only with shareholders that will hold shares as capital assets and does not address the tax treatment of shareholders that are subject to special rules, such as fiduciaries of pension, profit-sharing or other employee benefit plans, banks, insurance companies, dealers in securities or currencies, persons that hold shares as a position in a straddle, conversion transaction, synthetic security or other integrated financial transaction, persons that elect mark-to-market treatment, persons that own, directly or indirectly, 10 % or more of our stock, measured by vote or value, persons that hold shares through a partnership or hybrid entity and persons whose “functional currency” is not the U.S. dollar. The summary is based on German and U.S. laws, treaties and regulatory interpretations, including in the United States current and proposed U.S. Treasury regulations as of the date hereof, all of which are subject to change (possibly with retroactive effect).

Shareholders should consult their own advisors regarding the tax consequences of the ownership and disposition of shares in light of their particular circumstances, as well as the effect of any state, local or other national laws.

Taxation of Dividends

In general, dividends that we pay are subject to German withholding tax at an aggregate rate of 26.375 % (consisting of a 25 % withholding tax and a 1.375 % surcharge). Under the Treaty, a U.S. resident will be entitled to receive a refund from the German tax authorities of 11.375 in respect of a declared dividend of 100. For example, for a declared dividend of 100, a U.S. resident initially will receive 73.625 and may claim a refund from the German tax authorities of 11.375 and, therefore, receive a total cash payment of 85 (i.e., 85 % of the declared dividend). According to an amendment of the German Investment Tax Act dividends received by a fund within the meaning of the German Investment Tax Act are generally subject to 15 % German withholding tax equal to the Treaty tax rate.

For U.S. tax purposes, a U.S. resident will be deemed to have received total dividends of 100. The gross amount of dividends that a U.S. resident receives (which includes amounts withheld in respect of German withholding tax) generally will be subject to U.S. federal income taxation as foreign source dividend income, and will not be eligible for the dividends received deduction generally allowed to U.S. corporations. German withholding tax at the 15 % rate provided under the Treaty will be treated as a foreign income tax that, subject to generally applicable limitations under U.S. tax law, is eligible for credit against a U.S. resident's U.S. federal income tax liability or, at its election, may be deducted in computing taxable income. Thus, for a declared dividend of 100, a U.S. resident will be deemed to have paid German taxes of 15. A U.S. resident cannot claim credits for German taxes that would have been refunded to it if it had filed a claim for refund. Foreign tax credits will not be allowed for withholding taxes imposed in respect of certain short-term or hedged positions. The creditability of foreign withholding taxes may be limited in certain situations, including where the burden of foreign taxes is separated inappropriately from the related foreign income.

Subject to certain exceptions for short-term and hedged positions, "qualified dividends" received by certain non-corporate U.S. shareholders will generally be subject to taxation in the United States at a lower rate than other ordinary income. Dividends received will be qualified dividends if we (i) are eligible for the benefits of a comprehensive income tax treaty with the United States that the U.S. Internal Revenue Service ("IRS") has approved for purposes of the qualified dividend rules and (ii) were not, in the year prior to the year in which the dividend was paid, and are not, in the year in which the dividend is paid, a passive foreign investment company ("PFIC"). The Treaty has been approved for purposes of the qualified dividend rules, and we believe we qualify for benefits under the Treaty. The determination of whether we are a PFIC must be made annually and is dependent on the particular facts and circumstances at the time. It requires an analysis of our income and valuation of our assets, including goodwill and other intangible assets. Based on our audited financial statements and relevant market and shareholder data, we believe that we were not a PFIC for U.S. federal income tax purposes with respect to our taxable years ended December 31, 2016 or December 31, 2017. In addition, based on our current expectations regarding the value and nature of our assets, the sources and nature of our income, and relevant market and shareholder data, we do not currently anticipate becoming a PFIC for our taxable year ending December 31, 2018, or for the foreseeable future. However, the PFIC rules are complex and their application to financial services companies is unclear. Each U.S. shareholder should consult its own tax advisor regarding the potential applicability of the PFIC regime to us and its implications for their particular circumstances.

If a U.S. resident receives a dividend paid in euros, it will recognize income in a U.S. dollar amount calculated by reference to the exchange rate in effect on the date of receipt, regardless of whether the payment is in fact converted into U.S. dollars. If dividends are converted into U.S. dollars on the date of receipt, a U.S. resident generally should not be required to recognize foreign currency gain or loss in respect of the dividend income but may be required to recognize foreign currency gain or loss on the receipt of a refund in respect of German withholding tax to the extent the U.S. dollar value of the refund differs from the U.S. dollar equivalent of that amount on the date of receipt of the underlying dividend.

Refund Procedures

To claim a refund, a U.S. resident must submit, within four years from the end of the calendar year in which the dividend is received, a claim for refund to the German tax authorities. The claim for refund must be accompanied by a withholding tax certificate (Kapitalertragsteuerbescheinigung) on an officially prescribed form and issued by the institution that withheld the tax.

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Claims for refunds are made on a German claim for refund form, which must be filed with the German tax authorities: Bundeszentralamt für Steuern, An der Kuppe 1, D-53225 Bonn, Germany. The German claim for refund forms can be downloaded from the homepage of the Bundeszentralamt für Steuern (www.bzst.de). A U.S. resident must also submit to the German tax authorities a certification (on IRS Form 6166) with respect to its last filed U.S. federal income tax return. Requests for IRS Form 6166 are made on IRS Form 8802, which requires payment of a user fee. IRS Form 8802 and its instructions can be obtained from the IRS website at www.irs.gov. Instead of the individual refund procedure described above, a U.S. resident may use an IT-supported quick-refund procedure (“Datenträgerverfahren – DTV”/“Data Medium Procedure – DMP”). If the U.S. resident’s bank or broker elects to participate in the DMP, it will perform administrative functions necessary to claim the Treaty refund for the beneficiaries. The refund beneficiaries must provide specified information to the DMP participant and confirm to the DMP participant that they meet the conditions of the Treaty provisions and that they authorize the DMP participant to file applications and receive notices and payments on their behalf.

The refund beneficiaries also must provide a “certification of filing a tax return” on IRS Form 6166 with the DMP participant. In addition, if the individual refund procedure requires a withholding tax certificate (see above), such certificate is generally also necessary under the DMP.

The German tax authorities reserve the right to audit the entitlement to tax refunds for several years following their payment pursuant to the Treaty in individual cases. The DMP participant must assist with the audit by providing the necessary details or by forwarding the queries to the respective refund beneficiaries/shareholders. Presently the DMP cannot be used if the Treaty tax rate is below 15 %.

The German tax authorities will issue refunds denominated in euros. In the case of shares held through banks or brokers participating in the Depository Trust Company, the refunds will be issued to the Depository Trust Company, which will convert the refunds to U.S. dollars. The resulting amounts will be paid to banks or brokers for the account of holders.

If a U.S. resident holds its shares through a bank or broker who elects to participate in the DMP, it could take at least three weeks for it to receive a refund after a combined claim for refund has been filed with the German tax authorities. If a U.S. resident files a claim for refund directly with the German tax authorities, it could take at least eight months for it to receive a refund. The length of time between filing a claim for refund and receipt of that refund is uncertain and we can give no assurances as to when any refund will be received.

Taxation of Capital Gains

Under the Treaty, a U.S. resident will not be subject to German capital gains tax in respect of a sale or other disposition of shares. For U.S. federal income tax purposes, a U.S. holder will recognize capital gain or loss on the sale or other disposition of shares in an amount equal to the difference between such holder’s tax basis in the shares and the U.S. dollar value of the amount realized from their sale or other disposition. Such gain or loss will be capital gain or loss and will be long-term capital gain or loss if the shares were held for more than one year. The net amount of long-term capital gain realized by an individual generally is subject to taxation at a lower rate than ordinary

income. Any such gain generally would be treated as income arising from sources within the United States; any such loss would generally be allocated against U.S. source income. The ability to offset capital losses against ordinary income is subject to limitations.

Shareholders whose shares are held in an account with a German bank or financial services institution (including a German branch of a non-German bank or financial services institution) are urged to consult their own advisors. This summary does not discuss their particular tax situation.

United States Information Reporting and Backup Withholding

Dividends and payments of the proceeds on a sale of shares, paid within the United States or through certain U.S.-related financial intermediaries are subject to information reporting and may be subject to backup withholding unless the U.S. resident (i) is a corporation (other than an S corporation) or other exempt recipient or (ii) provides a taxpayer identification number and certifies (on IRS Form W-9) that no loss of exemption from backup withholding has occurred. Shareholders that are not U.S. persons generally are not subject to information reporting or backup withholding.

However, a non-U.S. person may be required to provide a certification (generally on IRS Form W-8BEN or W-8BEN-E) of its non-U.S. status in connection with payments received in the United States or through a U.S.-related financial intermediary.

Backup withholding tax is not an additional tax, and any amounts withheld under the backup withholding rules will be allowed as a refund or a credit against a holder's U.S. federal income tax liability, provided the required information is furnished to the IRS.

Shareholders may be subject to other U.S. information reporting requirements. Shareholders should consult their own advisors regarding the application of U.S. information reporting rules in light of their particular circumstances.

German Gift and Inheritance Taxes

Under the current estate, inheritance and gift tax treaty between the United States and Germany (the "Estate Tax Treaty"), a transfer of shares generally will not be subject to German gift or inheritance tax so long as the donor or decedent, and the heir, donee or other beneficiary, were not domiciled in Germany for purposes of the Estate Tax Treaty at the time the gift was made, or at the time of the decedent's death, and the shares were not held in connection with a permanent establishment or fixed base in Germany.

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The Estate Tax Treaty provides a credit against U.S. federal estate and gift tax liability for the amount of inheritance and gift tax paid in Germany, subject to certain limitations, where shares are subject to German inheritance or gift tax and United States federal estate or gift tax.

Other German Taxes

There are currently no German net wealth, transfer, stamp or other similar taxes that would apply to a U.S. resident as a result of the receipt, purchase, ownership or sale of shares.

Dividends and Paying Agents

Not required because this document is filed as an annual report.

Statement by Experts

Not required because this document is filed as an annual report.

Documents on Display

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended. In accordance with these requirements, we file reports and other information with the Securities and Exchange Commission. You may inspect and copy these materials, including this document and its exhibits, at the Commission's Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You may also obtain copies of the materials from the Public Reference Room at prescribed rates. You may obtain information on the operation of the Commission's Public Reference Room by calling the Commission in the United States at 1-800-SEC-0330. Our Securities and Exchange Commission filings are also available over the Internet at the Securities and Exchange Commission's website at www.sec.gov under File Number 001-15242.

Subsidiary Information

Not applicable.

Item 11: Quantitative and Qualitative Disclosures about Credit, Market and Other Risk

For Quantitative and Qualitative Disclosures about Credit, Market and Other Risk, please see "Management Report: Risk Report" in the Annual Report 2018.

Please see pages S-1 through S-20 of the Supplemental Financial Information, which pages are incorporated by reference herein, for information required by SEC Industry Guide 3.

Item 12: Description of Securities other than Equity Securities

Not required because this document is filed as an annual report and our ordinary shares are not represented by American Depositary Receipts.

PART II

Item 13: Defaults, Dividend Arrearages and Delinquencies

Not applicable.

Item 14: Material Modifications to the Rights of Security Holders and Use of Proceeds

With effect from January 1, 2017, the German Banking Act – as amended by the German Resolution Mechanism Act – introduced a new class of statutorily subordinated debt securities. As a result, unsecured, non-structured plain vanilla debt securities were considered “senior non-preferred” debt instruments which rank by law junior to a bank’s “senior preferred” liabilities (such as deposits, derivatives, money market instruments and debt instruments that are “structured” as defined in the German Banking Act), but in priority to the bank’s contractually subordinated liabilities, such as those qualifying as Tier 2 instruments. In the event of insolvency or resolution proceedings affecting Deutsche Bank AG, senior non-preferred debt instruments bear losses after the Bank’s contractually subordinated liabilities but before the Bank’s other unsubordinated liabilities. This statutory subordination applies to all relevant non-structured senior debt securities, even if issued prior to January 1, 2017.

Effective July 21, 2018, however, the German Banking Act was modified again to implement an amendment to the European Union’s Bank Recovery and Resolution Directive that aimed to harmonize the ranking of unsecured debt instruments issued by banks in the European Union. For non-structured senior debt instruments issued on or after July 21, 2018, banks are permitted to decide at issuance if a specific issuance of eligible senior debt will be in the non-preferred or in the preferred category. Eligible debt instruments issued on or after that date constitute “senior non-preferred” debt only if they contain an express reference to their lower ranking. Senior non-preferred debt instruments issued by Deutsche Bank AG since July 21, 2018 rank on parity with the then-outstanding debt instruments that were classified as “non-preferred” under the prior rules described above.

We may continue to issue non-structured debt securities as senior non-preferred debt instruments ranking junior to, among other instruments, “senior preferred” debt securities. In addition, we are now able to issue non-structured senior debt securities as senior preferred debt securities, ranking on parity with our structured senior debt securities, which was not possible before July 21, 2018. Such new senior preferred debt securities, whether structured or non-structured, rank on parity with other unsecured senior liabilities such as debt instruments with an initial term of less than one year, derivatives and deposits not subject to special protections in the event of resolution measures or insolvency.

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Item 15: Controls and Procedures

Disclosure Controls and Procedures

An evaluation was carried out under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934) as of December 31, 2018. There are, as described below, inherent limitations to the effectiveness of any control system, including disclosure controls and procedures. Accordingly, even effective disclosure controls and procedures can provide only reasonable assurance of achieving their control objectives. Based upon such evaluation, our Chief

Executive Officer and Chief Financial Officer concluded that the design and operation of our disclosure controls and procedures were effective as of December 31, 2018.

Management’s Annual Report on Internal Control over Financial Reporting

Management of Deutsche Bank Aktiengesellschaft, together with its consolidated subsidiaries, is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is a process designed under the supervision of our principal executive officer and our principal financial officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the firm’s financial statements for external reporting purposes in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board and as endorsed by the European Union. As of December 31, 2018, management conducted an assessment of the effectiveness of our internal control over financial reporting based on the framework established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on the assessment performed, management has determined that our internal control over financial reporting as of December 31, 2018 was effective based on the COSO framework (2013).

KPMG AG Wirtschaftsprüfungsgesellschaft, the registered public accounting firm that audited the financial statements included in this document, has issued a report on our internal control over financial reporting, which is set forth below.

Report of Independent Registered Public Accounting Firm

To the Supervisory Board of Deutsche Bank Aktiengesellschaft:

Opinion on Internal Control over Financial Reporting

We have audited Deutsche Bank Aktiengesellschaft and subsidiaries’ (the Company) internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2018 and 2017, the related consolidated statements of income, comprehensive income, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes, and the specific disclosures described in Note 1 to the consolidated financial statements as being part of the financial statements (collectively, the “consolidated financial statements”) and our report dated March 15, 2019 expressed an unqualified opinion on those consolidated financial statements.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying 'Management's Annual Report on Internal Control over Financial Reporting'. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Frankfurt am Main, Germany

March 15, 2019

KPMG AG

Wirtschaftsprüfungsgesellschaft

Change in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting identified in connection with the evaluation referred to above that occurred during the year ended December 31, 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. As such, disclosure controls and procedures or systems for internal control over financial reporting may not prevent all error and all fraud. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and any design may not succeed in achieving its stated goals under all potential future conditions; over time, control may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

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Item 16A: Audit Committee Financial Expert

Please see “Corporate Governance Statement/Corporate Governance Report: Auditing and Controlling: Audit Committee Financial Expert” in the Annual Report 2018.

Item 16B: Code of Ethics

Please see “Corporate Governance Statement/Corporate Governance Report: Values and Leadership Principles of Deutsche Bank AG and Deutsche Bank Group: Deutsche Bank Group Code of Conduct and Code of Ethics for Senior Financial Officers” in the Annual Report 2018.

Item 16C: Principal accountant fees and services

Please see “Management Report: Corporate Governance Statement/Corporate Governance Report: Auditing and Controlling: Principal Accountant Fees and Services” in the Annual Report 2018.

Item 16D: Exemptions from the Listing Standards for Audit Committees

Our common shares are listed on the New York Stock Exchange, the corporate governance rules of which require a foreign private issuer such as us to have an audit committee that satisfies the requirements of Rule 10A-3 under the U.S. Securities Exchange Act of 1934. These requirements include a requirement that the audit committee be composed of members that are “independent” of the issuer, as defined in the Rule, subject to certain exemptions, including an exemption for employees who are not executive officers of the issuer if the employees are elected or named to the board of directors or audit committee pursuant to the issuer’s governing law or documents, an employee collective bargaining or similar agreement or other home country legal or listing requirements. The German Co-Determination Act of 1976 (Mitbestimmungsgesetz) requires that the shareholders elect half of the members of the supervisory board of large German companies, such as us, and that employees in Germany elect the other half. Employee-elected members are typically themselves employees or representatives of labor unions representing employees. Pursuant to law and practice, committees of the Supervisory Board are typically composed of both

shareholder- and employee-elected members. Of the current members of our Audit Committee, four – Henriette Mark, Gabriele Platscher, Detlef Polaschek and Bernd Rose – are current employees of Deutsche Bank who have been elected as Supervisory Board members by the employees. None of them is an executive officer. Accordingly, their service on the Audit Committee is permissible pursuant to the exemption from the independence requirements provided for by paragraph (b)(1)(iv)(C) of the Rule. We do not believe the reliance on such exemption would materially adversely affect the ability of the Audit Committee to act independently and to satisfy the other requirements of the Rule.

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Item 16E: Purchases of Equity Securities by the Issuer and Affiliated Purchasers

In 2018, we repurchased a total of 18,089,000 shares of which none via derivatives, for group purposes pursuant to share buybacks authorized by the General Meeting. During the period from January 1, 2018 until the 2018 Annual General Meeting on May 24, 2018, we repurchased 8,748,000 shares, of which none via derivatives, of our ordinary shares pursuant to the authorization granted by the Annual General Meeting on May 18, 2017, at an average price of € 13.56 and for a total consideration of € 119 million. This authorization was replaced by a new authorization to buy back shares approved by the Annual General Meeting on May 24, 2018. Under the new authorization, up to 206,677,313 shares may be repurchased through April 30, 2023. Of these, 103,338,656 shares may be purchased by using derivatives. During the period from the 2018 Annual General Meeting until December 31, 2018, we repurchased 9,341,000 shares at an average price of € 9.60 and for a total consideration of € 90 million (excluding option premium). At December 31, 2018, the number of shares held in Treasury from buybacks totaled one thousand shares. This figure stems from 103,000 shares at the beginning of the year, plus 18.1 million shares from buybacks in 2018, less 18.1 million shares which were used to fulfill delivery obligations in the course of share-based compensation of employees. We did not cancel any shares in 2018.

In addition to these share buybacks for group purposes, pursuant to a shareholder authorization approved at our 2018 Annual General Meeting, we are authorized to buy and sell, for the purpose of securities trading, our ordinary shares through April 30, 2023, provided that number of shares held for this purpose may not at any time exceed 10 % of the company's share capital. The shares may be bought through the stock exchange or by means of a public purchase offer to all shareholders. The gross volume of these securities trading transactions is often large, and even the net amount of such repurchases or sales may, in a given month, be large, though over longer periods of time such transactions tend to offset and are in any event constrained by the 10 % of share capital limit. These securities trading transactions consist predominantly of transactions on major non-US securities exchanges. We also enter into derivative contracts with respect to our shares and limited to shares in a maximum volume of 5 % of the actual share capital.

The following table sets forth, for each month in 2018 and for the year as a whole, the total gross number of our shares repurchased by us and our affiliated purchasers (pursuant to both activities described above), the total gross number of shares sold, the net number of shares purchased or sold, the average price paid per share (based on the gross shares repurchased), the number of shares that were purchased for group purposes mentioned above and the maximum number of shares that at that date remained eligible for purchase under such programs.

Issuer Purchases of Equity Securities in 2018

Month	Total number of shares purchased	Total number of shares sold	Net number of shares purchased or (sold)	Average price paid per share (in €)	Number of shares purchased for group purposes	Maximum number of shares that may yet be purchased under plans or programs
January	31,214,338	29,995,355	1,218,983	15.40	1,267,854	195,695,819

February	53,389,970	51,419,875	1,970,095	13.29	6,513,163	189,182,656
March	57,891,253	60,007,344	(2,116,091)	12.57	966,983	188,215,673
April	21,080,046	21,062,502	17,544	11.69	0	188,215,673
May	54,150,047	54,125,678	24,369	10.34	0	206,677,313
June	29,630,586	24,229,187	5,401,399	9.51	5,400,000	201,277,313
July	11,680,598	11,645,482	35,116	10.01	0	201,277,313
August	11,100,499	14,513,704	(3,413,205)	10.19	981,000	200,296,313
September	31,099,776	32,745,067	(1,645,291)	10.18	2,960,000	197,336,313
October	12,726,224	12,900,223	(173,999)	9.34	0	197,336,313
November	13,216,751	13,371,245	(154,494)	8.62	0	197,336,313
December	44,999,662	45,191,034	(191,372)	7.40	0	197,336,313
Total 2018	372,179,750	371,206,696	973,054	11.07	18,089,000	197,336,313

At December 31, 2018, the number of shares held by us in treasury totaled 1,344,144. This figure stems from 371,090 shares at the beginning of the year, plus 973,054 net shares purchased in 2018. At December 31, 2018, our issued share capital consisted of 2,066,773,131 ordinary shares, of which 2,065,428,987 were outstanding.

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Item 16F: Change in Registrant’s Certifying Accountant

Our current external auditor, KPMG AG Wirtschaftsprüfungsgesellschaft, is again to be proposed as our auditor for the 2019 financial year at our 2019 Annual General Meeting.

New European and national regulations, however, require a rotation of the external auditor at regular intervals. The tender process for a new external auditor was announced in February 2018. An extensive and rigorous evaluation process held over seven months was run independently by the Audit Committee of the Supervisory Board.

The Bank’s Supervisory Board has decided to recommend the appointment of Ernst & Young GmbH Wirtschaftsprüfungsgesellschaft as external auditor. This recommendation will be put to shareholders at the 2019 Annual General Meeting.

Deutsche Bank anticipates that following the appointment, the new external auditor will review the presentation of financial results for the first quarter of 2020 and will be recommended at the 2020 Annual General Meeting as external auditor for the full financial year 2020. The auditor’s mandate will cover both Deutsche Bank AG and the Deutsche Bank Group.

Item 16G: Corporate Governance

Our common shares are listed on the New York Stock Exchange, as well as on all seven German stock exchanges. Set forth below is a description of the significant ways in which our corporate governance practices differ from those applicable to US domestic companies under the New York Stock Exchange’s listing standards as set forth in its Listed Company Manual (the “NYSE Manual”).

The Legal Framework. Corporate governance principles for German stock corporations (Aktiengesellschaften) are set forth in the German Stock Corporation Act (Aktiengesetz), the German Co-Determination Act of 1976 (Mitbestimmungsgesetz) and the German Corporate Governance Code (Deutscher Corporate Governance Kodex, referred to as the Code).

The Two-Tier Board System of a German Stock Corporation. The German Stock Corporation Act provides for a clear separation of management and oversight functions. It therefore requires German stock corporations to have both a supervisory board (Aufsichtsrat) and a management board (Vorstand). These boards are separate; no individual may be a member of both. Both the members of the management board and the members of the supervisory board must exercise the standard of care of a diligent business person to the company. In complying with this standard of care they are required to take into account a broad range of considerations, including the interests of the company and those of its shareholders, employees and creditors.

The management board is responsible for managing the company and representing the company in its dealings with third parties. The management board is also required to ensure appropriate risk management within the corporation and to establish an internal monitoring system. The members of the management board, including its chairperson or speaker, are regarded as peers and share a collective responsibility for all management decisions.

The supervisory board appoints and removes the members of the management board. It also may appoint a chairman (CEO) and one or more deputy chairmen (“Presidents”) of the management board. Although it is not permitted to make management decisions, the supervisory board has comprehensive monitoring functions with respect to the activities of the management board, including advising the management board and participating in decisions of fundamental importance to the company. To ensure that these monitoring functions are carried out properly, the management board must, among other things, regularly report to the supervisory board with regard to current business operations and business planning, including any deviation of actual developments from concrete and material targets previously presented to the supervisory board. The supervisory board may also request special reports from the management board at any time. Transactions of fundamental importance to the company, such as major strategic decisions or other actions that may have a fundamental impact on the company’s assets and liabilities, financial condition or results of operations, may be subject to the consent of the supervisory board. Pursuant to our Articles of Association (Satzung), such transactions include the granting of powers of attorney without limitation to the affairs of a specific office, major acquisitions or disposals of real estate or participations in companies and granting of loans, including the acquisition of participations in other companies if the German Banking Act (Kreditwesengesetz) requires approval by the Supervisory Board.

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Pursuant to the German Co-Determination Act, our Supervisory Board consists of representatives elected by the shareholders and representatives elected by the employees in Germany. Based on the total number of Deutsche Bank employees in Germany these employees have the right to elect one-half of the total of twenty Supervisory Board members. The chairperson of the Supervisory Board of Deutsche Bank is a shareholder representative who has the deciding vote in the event of a tie.

This two-tier board system contrasts with the unitary board of directors envisaged by the relevant laws of all US states and the New York Stock Exchange listing standards for US companies.

German companies which have their shares listed on a stock exchange must report each year on the company’s corporate governance in their annual report to shareholders.

The Recommendations of the Code. The Code was issued in 2002 by a commission composed of German corporate governance experts appointed by the German Federal Ministry of Justice in 2001. The Code was last amended in February 2017 and, as a general rule, will be reviewed annually and amended if necessary to reflect international

corporate governance developments. The Code describes and summarizes the basic mandatory statutory corporate governance principles found in the provisions of German law. In addition, it contains supplemental recommendations and suggestions for standards on responsible corporate governance intended to reflect generally accepted best practice.

The Code addresses six core areas of corporate governance. These are (1) shareholders and the general meeting, (2) the cooperation between the management board and the supervisory board, (3) the management board, (4) the supervisory board, (5) transparency and (6) financial reporting and auditing.

The Code contains three types of provisions. First, the Code describes and summarizes the existing statutory, i.e., legally binding, corporate governance framework set forth in the German Stock Corporation Act and in other German laws. Those laws – and not the incomplete and abbreviated summaries of them reflected in the Code – must be complied with. The second type of provisions is recommendations. While these are not legally binding, Section 161 of the German Stock Corporation Act requires that any German exchange-listed company declare annually that the company complies with the recommendations of the Code or, if not, which recommendations the company does not comply with (“comply or explain”). The third type of Code provisions comprises suggestions which companies may choose not to comply with without disclosure. The Code contains a significant number of such suggestions, covering almost all of the core areas of corporate governance it addresses.

In their last Declaration of Conformity of October 25, 2018, the Management Board and the Supervisory Board of Deutsche Bank stated that, since the last Declaration of Conformity issued on October 26, 2017, they have acted and will act in the future in conformity with the recommendations of the Code, with certain specified exceptions. The Declaration of Conformity is available on Deutsche Bank’s internet website at www.db.com/ir/en/documents.htm.

Supervisory Board Committees. The supervisory board may form committees. The German Co-Determination Act requires that the supervisory board form a mediation committee to propose candidates for the management board in the event that the two-thirds majority of the members of the supervisory board needed to appoint members of the management board is not met.

The German Stock Corporation Act specifically mentions the possibility to establish an “audit committee” to deal with the supervision of accounting processes, the efficiency of the internal control system the risk management system and the internal revision system as well as with the annual auditing, in particular with the auditor independence, the engagement and compensation of outside auditors appointed by the shareholders’ meeting and the determination of auditing focal points. The Code recommends establishing such an “audit committee”. The Code also recommends establishing a “nomination committee” comprised only of shareholder-elected supervisory board members to prepare the supervisory board’s proposals for the election or appointment of new shareholder representatives to the supervisory board. The Code also includes suggestions on the subjects that may be handled by supervisory board committees, including corporate strategy, compensation of the members of the management board, investments and financing. Under the German Stock Corporation Act, any supervisory board committee must regularly report to the supervisory board. Sections 25d (7) to (12) of the German Banking Act require, depending on size and complexity of the respective credit institution, the establishment of supervisory board committees with specific tasks to be performed as follows: risk committee, audit committee, nomination committee (with different tasks and composition requirements than under the Code) and compensation control committee.

The Supervisory Board of Deutsche Bank has established a Chairman’s Committee (Präsidialausschuss) which is responsible for conclusion, amendment and termination of employment and pension contracts in consideration of the plenary Supervisory Board’s sole authority to decide on the remuneration of the members of the Management Board, a Nomination Committee (Nominierungsausschuss), an Audit Committee (Prüfungsausschuss), a Risk Committee

(Risikoausschuss), an Integrity Committee (Integritätsausschuss), a Compensation Control Committee (Vergütungskontrollausschuss), Strategy Committee (Strategieausschuss), Technology, Data and Innovation Committee (Technologie-, Daten- und Innovationsausschuss) and the legally required Mediation Committee (Vermittlungsausschuss). The functions of a nominating/corporate governance committee and of a compensation committee required by the NYSE Manual for US companies listed on the NYSE are therefore performed by the Supervisory Board or one of its committees, in particular the Chairman's Committee, the Compensation Control Committee and the Mediation Committee.

Independent Board Members. The NYSE Manual requires that a majority of the members of the board of directors of a NYSE listed US company and each member of its nominating/corporate governance, compensation and audit committees be "independent" according to strict criteria and that the board of directors determines that such member has no material direct or indirect relationship with the company.

As a foreign private issuer, Deutsche Bank is not subject to these requirements. However, its audit committee must meet the more lenient independence requirement of Rule 10A-3 under the Securities Exchange Act of 1934. German corporate law does not require an affirmative independence determination, meaning that the Supervisory Board need not make affirmative findings that audit committee members are independent. However, the Code contains several rules, recommendations and suggestions to ensure the supervisory board's independent advice to, and supervision of, the management board. As noted above, no member of the management board may serve on the supervisory board (and vice versa). Supervisory board members will not be bound by directions or instructions from third parties. Any advisory, service or similar contract between a member of the supervisory board and the company is subject to the supervisory board's approval. A similar requirement applies to loans granted by the company to a supervisory board member or other persons, such as certain members of a supervisory board member's family. In addition, the German Stock Corporation Act prohibits a person who within the last two years was a member of the management board from becoming a member of the supervisory board of the same company unless he or she is elected upon the proposal of shareholders holding more than 25 % of the voting rights of the company.

The Code also recommends that each member of the supervisory board inform the supervisory board of any conflicts of interest which may result from a consulting or directorship function with clients, suppliers, lenders or other business partners of the stock corporation. In the case of material conflicts of interest or ongoing conflicts, the Code recommends that the mandate of the Supervisory Board member be removed by the shareholders' meeting. The Code further recommends that any conflicts of interest that have occurred be reported by the supervisory board at the annual general meeting, together with the action taken, and that potential conflicts of interest also be taken into account in the nomination process for the election of supervisory board members.

Audit Committee Procedures. Pursuant to the NYSE Manual the audit committee of a US company listed on the NYSE must have a written charter addressing its purpose, an annual performance evaluation, and the review of an auditor's report describing internal quality control issues and procedures and all relationships between the auditor and the company. The Audit Committee of Deutsche Bank operates under written terms of reference and reviews the efficiency of its activities regularly.

Disclosure of Corporate Governance Guidelines. Deutsche Bank discloses its Articles of Association, the Terms of Reference of its Management Board, its Supervisory Board, the Chairman's Committee, the Audit Committee, the Risk Committee, the Integrity Committee, the Compensation Control Committee, the Nomination Committee, the Strategy Committee and the Technology, Data and Innovation Committee, its Declaration of Conformity under the Code and other documents pertaining to its corporate governance on its internet website at www.db.com/ir/en/documents.htm.

Item 16H: Mine Safety Disclosure

Not applicable.

Disclosures Under Iran Threat Reduction and Syria Human Rights Act of 2012

Under Section 219 of the Iran Threat Reduction and Syria Human Rights Act of 2012, which added Section 13(r) of the US Securities Exchange Act of 1934, as amended, an issuer of securities registered under the Securities Exchange Act of 1934 is required to disclose in its periodic reports filed under the Securities Exchange Act of 1934 certain of its activities and those of its affiliates relating to Iran and to other persons sanctioned by the US under programs relating to terrorism and proliferation of weapons of mass destruction that occurred during the period covered by the report. We describe below a number of potentially disclosable activities of Deutsche Bank AG and its affiliates. Disclosure is generally required regardless of whether the activities, transactions or dealings were conducted in compliance with applicable law.

The Joint Comprehensive Plan of Action (JCPoA) was concluded on July 14, 2015 between the permanent members of the UN Security Council and Germany on the one hand and Iran on the other and implemented on January 16, 2016. Under the JCPoA, Iran was to receive relief from US, European Union, and United Nations Security Council nuclear-related sanctions. The United States withdrew from the JCPoA, effective on November 5, 2018. The changes resulting from the implementation of the JCPoA and from the United States' withdrawal from it have no consequences for the reporting obligations that apply to Deutsche Bank. Deutsche Bank also reports transactions in which other Iranian persons or entities listed on OFAC sanctions lists were involved, whether or not they are directly or indirectly owned or controlled by the Iranian government.

Legacy Financing Arrangements. Despite having ceased entering into new business in or with Iran in 2007, we continued to be engaged as lender, sponsoring bank and/or facility agent or arranger in several long-term financing agreements relating to the construction or acquisition of plant or equipment for the petroleum and petrochemical industries, under which Iranian entities were the direct or indirect borrowers. Before 2007, as part of banking consortia, we entered into a number of financing arrangements with the National Petrochemical Company (NPC), the last one of which was fully repaid in 2018. To effect such repayment, NPC paid approximately € 2.8 million to us, in our role as agent under the facility. We distributed to the participants in the banking consortia this amount, retaining the portion owed to us, totaling approximately € 0.7 million. For one of the previously repaid commitments, we had an undrawn commitment of approximately € 1.3 million for which a required approval for cancellation was received in November 2018 from the German government, after which the commitment was effectively cancelled.

We generated revenues in 2018 of approximately € 5,000 in respect of these financing arrangements, of which approximately € 6,000 consisted of loan interest revenues and € 1,000 consisted of fee revenues; these positive revenues were reduced by approximately € 2,000 negative escrow account revenues. The net profits were less than these amounts.

In one additional financing arrangement, we were not ourselves a lender but acted rather as agent for a lender, a state-owned development bank. In this capacity, we received fees from the Iranian borrower of approximately € 2,800. The remainder of this loan was fully repaid in 2018.

Legacy Contractual Obligations Related to Guarantees and Letters of Credit. Prior to 2007, we provided guarantees to a number of Iranian entities. In almost all of these cases, we issued counter-indemnities in support of guarantees issued by Iranian banks because the Iranian beneficiaries of the guarantees required that they be backed directly by Iranian banks. In 2007, we made a decision to discontinue issuing new guarantees to Iranian or Iran-related beneficiaries. The pre-existing guarantees stipulate that they must be either extended or honored if we receive such a demand and we are legally not able to terminate these guarantees. In 2018, in order not to pay under the guarantees,

we extended two guarantees for a total amount of approximately € 3.8 million for which we paid guarantee commission amounting to approximately € 38,000. Even though we had exited, where possible, many of these guarantees, guarantees with an aggregate face amount of approximately € 7.0 million are still outstanding as of year-end 2018. The gross revenues from this business in 2018 which we received from non-Iranian parties were approximately € 71,000 and the net profit we derived from these activities was less than this amount.

We also have outstanding legacy guarantees in relation to a Syrian bank sanctioned by the US under its non-proliferation program. The aggregate face amount of these legacy guarantees was approximately € 9.2 million as of December 31, 2018, the gross revenues received from non-Syrian parties for these guarantees were approximately € 67,000 in 2018 and the net profit we derived from these activities was less than this amount.

We still intend to exit these guarantee arrangements.

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Payments Executed. After the Implementation Day of the JCPoA on January 16, 2016, Deutsche Bank reviewed its existing approach regarding the processing of payments related to Iran in particular with a view to the reconnection of certain Iranian banks in the EU to the European Payment System Target2 and the expectation expressed by the Bundesbank to allow the execution of payments. As a result, Deutsche Bank confirmed its overall restrictive policy on Iran but allowed limited exceptions, starting in April 2016. In order to execute transactions, the following provisions needed to be met simultaneously:

- Incoming and outgoing payments are on behalf of Deutsche Bank's own clients only (financial institutions are not included).
- Payments must be denominated in Euros.
- Clients need to submit to the bank a specific client declaration.
- Incoming payments need generally to come through Iranian banks not sanctioned by the EU.
- Outgoing payments need to go through Iranian banks connected to Target2 and not sanctioned by the EU.
- All relevant transactions will be subject to enhanced due diligence.

In light of the regulatory and reputational risks following the re-positioning of the United States in relation to the JCPoA, which became fully effective on November 5, 2018, Deutsche Bank has again severely restricted its policy on Iran and consequently the execution of such payments.

Incoming Payments. In 2018, we received less than 1,100 payments adding up to approximately € 220 million in favor of non-Iranian clients of which some payments ultimately originated from Iranian persons and entities and others were merely channeled through Iranian intermediary banks not subject to EU sanctions or US secondary sanctions after Implementation Day of the JCPoA and before the Bank's readjustment of its Iran policy in early November 2018. Revenues for these incoming payments were less than € 7,200. These figures include relevant transactions by order of Iranian Embassy-related offices not included in the section on Iranian Consulates and Embassies below and in favor of our non-Iranian clients.

Outgoing Payments. In 2018, before the Bank readjusted its Iran policy in early November 2018, we executed less than 150 payments adding up to approximately € 1.1 billion; again, some payments were executed in favor of Iranian persons and entities and others were merely channeled through Iranian intermediary banks that are not subject to EU sanctions or US secondary sanctions. Revenues for these outgoing payments were less than € 1,200. These figures include relevant transactions in favor of Iranian Embassy-related offices not included in the section on Iranian Consulates and Embassies below.

Operations of Iranian Bank Branches and Subsidiaries in Germany. Several Iranian banks, including Bank Melli Iran, Bank Saderat, and Europäisch-Iranische Handelsbank, have branches or offices in Germany, even though their funds and other economic resources had been frozen earlier under European law. As part of the payment clearing system in Germany and other European countries, when these branches or offices needed to make payments in Germany or Europe to cover their day-to-day operations such as rent, taxes, insurance premia and salaries for their remaining staff, or for any other kind of banking-related operations, fund transfers from these Iranian banks had been accepted through Target2.

In 2018, we executed approximately € 4.4 million in transfers through Target2 across approximately 1,100 transactions and credited the relevant amounts to our non-Iranian clients. The gross revenues derived from these payments were approximately € 5,700.

We do not consider the execution of such transactions to be significant and we expect that we will continue to execute such transactions in the future.

Maintaining of Accounts for Iranian Consulates and Embassies. In 2018, Iranian embassies and consulates in Germany held accounts with us. The purpose of these accounts is the funding of day-to-day operational costs of the embassies and consulates, such as salaries, rent and electricity. In 2018, the total volume of outgoing payments from these accounts was approximately € 9.3 million. From these activities, we derived gross revenues of approximately € 29,000 and net profits which were less than this amount. The German government has requested that we provide these services to enable the government of Iran to conduct its diplomatic relations.

Activities of Entities in Which We Have Interests. Section 13(r) requires us to provide the specified disclosure with respect to ourselves and our “affiliates,” as defined in Exchange Act Rule 12b-2. Although we have minority equity interests in certain entities that could arguably result in these entities being deemed “affiliates,” we do not have the authority or the legal ability to acquire in every instance the information from these entities that would be necessary to determine whether they are engaged in any disclosable activities under Section 13(r). In some cases, legally independent entities are not permitted to disclose the details of their activities to us because of German privacy and data protection laws or the applicable banking laws and regulations. In such cases, voluntary disclosure of such details could violate such legal and/or regulatory requirements and subject the relevant entities to criminal prosecution or regulatory investigations.

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PART III

Item 17: Financial Statements

Not applicable.

Item 18: Financial Statements

The Financial Statements of this Annual Report on Form 20-F consist of the Consolidated Financial Statements including Notes 1 to 45 thereto, which are set forth as Part 2 of the Annual Report 2018, and, as described in Note 1 “Significant Accounting Policies and Critical Accounting Estimates” thereto in the third paragraph under “Basis of Accounting”, certain parts of the Management Report set forth as Part 1 of the Annual Report 2018. Such Consolidated Financial Statements have been audited by KPMG AG Wirtschaftsprüfungsgesellschaft, as described in their “Report of Independent Registered Public Accounting Firm” included in the Annual Report 2018.

Item 19: Exhibits

We have filed the following documents as exhibits to this document.

Exhibit number	Description of Exhibit
1.1	<u>English translation of the Articles of Association of Deutsche Bank AG, furnished as Exhibit 3.2 to our Report on Form 6-K dated December 1, 2017 and incorporated by reference herein.</u>
2.1	The total amount of long-term debt securities of us or our subsidiaries authorized under any instrument does not exceed 10 percent of the total assets of our Group on a consolidated basis. We hereby agree to furnish to the Commission, upon its request, a copy of any instrument defining the rights of holders of long-term debt of us or of our subsidiaries for which consolidated or unconsolidated financial statements are required to be filed.
4.1	<u>Equity Plan Rules 2015, furnished as Exhibit 4.5 to our 2014 Annual Report on Form 20-F and incorporated by reference herein.</u>
4.2	<u>Equity Plan Rules 2016, furnished as Exhibit 4.6 to our 2015 Annual Report on Form 20-F and incorporated by reference herein.</u>
4.3	<u>Equity Plan Rules 2017, furnished as Exhibit 4.6 to our 2016 Annual Report on Form 20-F and incorporated by reference herein.</u>
4.4	<u>Equity Plan Rules 2018, furnished as Exhibit 4.6 to our Registration Statement on Form S-8 No. 333-223301 and incorporated by reference herein.</u>
4.5	<u>Equity Plan Rules 2019.</u>
4.6	<u>Key Retention Plan Equity Plan Rules 2017, furnished as Exhibit 4.7 to our 2016 Annual Report on Form 20-F and incorporated by reference herein.</u>
4.7	<u>Restricted Share Plan Rules 2018, furnished as Exhibit 4.8 to our Registration Statement on Form S-8 No. 333-223301 and incorporated by reference herein.</u>
4.8	<u>Restricted Share Plan Rules 2019.</u>
8.1	<u>List of Subsidiaries.</u>
12.1	<u>Principal Executive Officer Certifications Required by 17 C.F.R. 240.13a-14(a).</u>
12.2	<u>Principal Financial Officer Certifications Required by 17 C.F.R. 240.13a-14(a).</u>
13.1	<u>Chief Executive Officer Certification Required by 18 U.S.C. Section 1350.</u>
13.2	<u>Chief Financial Officer Certification Required by 18 U.S.C. Section 1350.</u>
14.1	<u>Legal Opinion regarding confidentiality of related party customers.</u>
15.1	<u>Consent of KPMG AG Wirtschaftsprüfungsgesellschaft.</u>
101.1	Interactive Data File

Signatures

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and has duly caused and authorized the undersigned to sign this annual report on its behalf.

Date: March 22, 2019

Deutsche Bank Aktiengesellschaft

/s/CHRISTIAN SEWING

Christian Sewing
Chairman of the Management Board
Chief Executive Officer

/s/JAMES VON MOLTKE

James von Moltke
Member of the Management Board
Chief Financial Officer

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Annual Report

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Deutsche Bank

The Group at a glance

	2018	2017
Key financial information		
Post-tax return on average shareholders' equity	0.4 %	(1.2) %
Post-tax return on average tangible shareholders' equity	0.5 %	(1.4) %
Cost/income ratio ¹	92.7 %	93.4 %
Compensation ratio ²	46.7 %	46.3 %
Noncompensation ratio ³	46.0 %	47.0 %
Total net revenues, in € m.	25,316	26,447
Provision for credit losses, in € m.	525	525
Total noninterest expenses, in € m.	23,461	24,695
Adjusted costs ⁴	22,810	23,891
Income (loss) before income taxes, in € m.	1,330	1,228
Net income (loss), in € m.	341	(735)
Basic earnings per share	€ (0.01)	€ (0.53)
Diluted earnings per share	€ (0.01)	€ (0.53)
Share price at period end	€ 6.97	€ 15.88
Share price high	€ 16.46	€ 17.82
Share price low	€ 6.68	€ 13.11

Dec 31, 2018 Dec 31, 2017

CRR/CRD 4 Leverage Ratio (fully loaded)	4.1 %	3.8 %
CRR/CRD 4 Leverage Ratio (phase in)	4.3 %	4.1 %
Fully loaded CRR/CRD 4 leverage exposure, in € bn.	1,273	1,395
Common Equity Tier 1 capital ratio (fully loaded)	13.6 %	14.0 %
Common Equity Tier 1 capital ratio (phase in)	13.6 %	14.8 %
Risk-weighted assets, in € bn.	350	344
Total assets, in € bn.	1,348	1,475
Shareholders' equity, in € bn.	62	63
Book value per basic share outstanding	€ 29.69	€ 30.16
Tangible book value per basic share outstanding	€ 25.71	€ 25.94
Other Information		
Branches	2,064	2,425
Thereof: in Germany	1,409	1,570
Employees (full-time equivalent)	91,737	97,535
Thereof: in Germany	41,669	42,526

1Total noninterest expenses as a percentage of net interest income before provision for credit losses, plus noninterest income.

2Compensation and benefits as a percentage of total net interest income before provision for credit losses, plus noninterest income.

3Noncompensation noninterest expenses, which is defined as total noninterest expenses less compensation and benefits, as a percentage of total net interest income before provision for credit losses, plus noninterest income.

4The reconciliation of adjusted costs to noninterest expenses is provided in section "Supplementary Information (Unaudited): Non-GAAP Financial Measures: Adjusted costs" of this document.

Due to rounding, numbers presented throughout this document may not sum precisely to the totals provided and percentages may not precisely reflect the absolute figures.

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[Pages II to XXII intentionally left blank for SEC filing purposes]

II

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Management Report

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Operating and Financial Review

The following discussion and analysis should be read in conjunction with the consolidated financial statements and the related notes to them. Our Operating and Financial Review includes qualitative and quantitative disclosures on Segmental Results of Operations and Entity Wide disclosures on Net Revenue Components as required by International Financial Reporting Standard (IFRS) 8, “Operating Segments”. This information, which forms part of and is incorporated by reference into the financial statements of this report, is marked by a bracket in the margins throughout this Operating and Financial Review. For additional Business Segment disclosure under IFRS 8 please refer to Note 4 “Business Segments and Related Information” of the Consolidated Financial Statements. Forward-looking statements are disclosed in our Outlook section.

Executive Summary

The Global Economy

Economic growth (in %)¹ 2018² 2017 Main driver

Global Economy	3.8	3.8	Robust global growth, with industrialized countries saw a peak in their economic cycle, while growth in emerging markets slowed towards the end of the year. Trade tensions reached a level that weighed on global trade. The strong US economy provided impetus to global growth.
Of which:			
Industrialized countries	2.2	2.3	The global momentum supported growth in industrialized countries but trade disputes began to have a negative impact on the global value chains of the industrialized countries.
Emerging markets	4.9	4.8	Emerging markets benefited from the extension of the global economic cycle. Growth peaked in Asia whereas some Latin American economies stabilized.
Eurozone Economy	1.8	2.5	The eurozone economy expanded more slowly than expected, reflecting temporary effects in some member states and a deteriorating external environment. Growth was supported by domestic demand underpinned by a solid income growth and improved financial conditions.
Of which:			
German economy	1.4	2.2	The German economy surprised to the downside. Delays in the certification of new vehicles hampered automobile production and thus impacted the overall economic value chain. A tight labor market led to strong wage agreements.
US Economy	2.9	2.2	Strong performance of the US economy was supported by tax cuts, fiscal spending as well as supportive financial conditions and consumer spending backed by wage growth and a tight labor market.
Japanese Economy	0.7	1.9	The Japanese economy slowed due to lower private consumption spending and lower employment growth as well as weaker external demand.
Asian Economy ³	6.2	6.1	Asian economies continued to show strong growth, but may have passed their cyclical peak. Trade was a key driver of economic expansion.
Of which:			
Chinese Economy	6.6	6.9	Chinese growth slowed somewhat. The government has kept a tight policy stance in the property sector. Lower land sales impacted sliding fiscal revenues. Chinese exports were resilient despite growing trade tensions throughout 2018.

¹ Annual Real GDP Growth (% YoY). Sources: National Authorities unless stated otherwise.

²Sources: Deutsche Bank Research.

³Including China, India, Indonesia, Republic of Korea, and Taiwan, ex Japan.

The Banking Industry

In the Eurozone, 2018 saw banks record their first noteworthy growth in corporate lending since the financial crisis, with volumes up 2 % year on year. By contrast, the dynamics in real estate lending to households and in consumer lending were stable at 3 %. Interest rates remained close to historical lows and weighed on the banks' net interest margin. Growth in corporate deposits slowed quite significantly to 3 % year on year while growth in retail deposits increased to over 4.5 %. European banks likely saw revenues and overhead expenses decline slightly, with a significant drop in risk provisions (from an already low level).

In Germany, lending to corporates and the self-employed continued to gain considerable pace last year, an increase of 5.5 % year on year. The figure was the highest since the dot-com bubble in the early 2000s and coincided with a sharp decline in corporate bond issuance. Retail lending also continued to expand at 3.5 %, driven by a 5 % increase in mortgage volumes. On the funding side, household deposits grew roughly at 5 % while corporate deposits expanded at a considerably slower pace of 2.5 %. Despite excellent asset quality, there is no change expected in the structurally low profitability of Germany's banks, a situation mainly caused by the intense competition and low interest rate

environment.

2

The US banking industry is almost certain to have set a new profit record. The first nine months saw the banks already generate higher net profit than in any prior full-year period. This was due to a wide range of factors including healthy credit business, the benefit of higher interest rates on net interest margin and on liquid funds, tax cuts, and market share gained in the global capital markets business. Lending to households increased by 2.2 % year on year a decline from its 2017 rate reflecting slower growth in mortgage lending to 3 % and a 9 % decline in home equity loans, while growth in consumer loans was stable at 5 %. In contrast, the growth rate in lending to businesses doubled to 7.5 % over the course of the year, driven by double-digit growth in corporate lending, where outstanding volumes have doubled since 2010. Commercial real estate lending grew at a somewhat lower rate than in the previous year at 5 %. Private sector deposits continued to expand by 4 %.

In China, the credit growth further slowed in 2018. Lending to businesses grew by just 8 % year on year, while the figure for retail customers was 18 %. Private sector deposits grew at a 7 % rate, stable versus the prior period. In Japan, too, growth rates remained largely stable overall at 2.5 % for lending and 3.5 % for deposits.

Investment banking recorded a solid result in the M&A advisory business in 2018, while transaction volumes in equity and debt issuance saw year-on-year declines. Securities trading posted largely positive growth. Equities trading in the United States and the derivatives business delivered an excellent performance and there was also robust growth in bonds. The only contraction was in European equities trading.

Deutsche Bank Performance

In 2018, Deutsche Bank achieved its first full year net profit since 2014 and delivered on its adjusted cost and headcount targets. The bank also announced and executed against a series of strategic repositioning measures, mainly within the Corporate & Investment Bank, and made good progress while further strengthening its controls and processes. In 2018, the bank successfully completed the legal merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank, the partial sale of the retail business in Poland, the integration of Sal. Oppenheim and the Initial Public Offering (“IPO”) of DWS Group GmbH & Co. KGaA (“DWS”). The bank is focused on redeploying resources and investing in areas of core strength which the management believes will drive growth.

Group Key Performance Indicators

Near-term operating performance	Status end of 2018	Status end of 2017
Post-tax return on average tangible shareholders' equity ¹	0.5 %	(1.4) %
Adjusted costs ²	€ 22.8 bn	€ 23.9 bn
Employees ³	91,737	97,535
Capital performance		
CRR/CRD 4 fully loaded Common Equity Tier 1 ratio ⁴	13.6 %	14.0 %
CRR/CRD 4 leverage ratio (phase-in) ⁴	4.3 %	4.1 %

¹Based on Net Income attributable to Deutsche Bank shareholders and additional equity components. For further information, please refer to “Supplementary Information: Non-GAAP Financial Measures” of this report.

²Adjusted costs are noninterest expenses excluding impairment of goodwill and other intangible assets, litigation and

restructuring and severance. For further information, please refer to “Supplementary Information: Non-GAAP Financial Measures” of this report.

3Internal full-time equivalents.

4Further detail on the calculation of this ratio is provided in the Risk Report.

Net revenues in 2018 were € 25.3 billion, a decline of € 1.1 billion, or 4 % from 2017. Revenues in the Corporate & Investment Bank (CIB) were impacted by the strategic repositioning, specifically the reduction in headcount and leverage exposure, challenging market conditions, lower client activity, which was in part driven by adverse developments with respect to the bank, negative interest rates and margin compression. Revenues in Private & Commercial Bank (PCB) were essentially flat as growth in revenues from loans was offset by ongoing interest rate headwinds on deposit products. Revenues in Asset Management (AM) were impacted by net outflows, margin compression, lower performance fees and the absence of specific revenue items recorded in 2017. Revenues in Corporate and Other (C&O) improved mainly driven by the absence of the realization of a negative currency translation adjustment related to the sale of a non-strategic subsidiary in Argentina in 2017 and higher positive impacts from valuation and timing differences in 2018 compared to prior year.

Provision for credit losses was € 525 million in 2018, unchanged compared to 2017.

Noninterest expenses in 2018 were € 23.5 billion, a decrease of € 1.2 billion or 5 %, from 2017 as management executed on its cost reduction targets. The decrease was driven by reductions across most of the cost categories including lower compensation and benefits expense, reduced cost for professional service fees and for occupancy, as well as lower litigation and restructuring charges.

3

Income before income taxes was € 1.3 billion in 2018 compared to € 1.2 billion in 2017, an increase of € 103 million or 8 % mainly driven by lower noninterest expenses partly offset by lower revenues.

Income tax expense was € 989 million in 2018, compared to € 2.0 billion in 2017 which included a one-time tax charge of € 1.4 billion attributable to the remeasurement of US deferred tax assets as a result of the US tax reform. The effective tax rate of 74 % in 2018 was mainly impacted by changes in the recognition and measurement of deferred tax assets and share-based payment-related tax effects.

The bank reported a net income of € 341 million in 2018, compared to a net loss of € 735 million in 2017. The improvement was primarily driven by the absence of the prior year’s one-time tax charge and lower noninterest expenses.

The bank’s CRR/CRD 4 fully loaded Common Equity Tier 1 (CET 1) ratio was 13.6 % at the end of 2018 compared to 14.0 % at the end of 2017, primarily driven by an increase in Risk weighted assets.

Deutsche Bank Group

Deutsche Bank: Our Organization

Headquartered in Frankfurt am Main, Germany, we are the largest bank in Germany and one of the largest financial institutions in Europe and the world, as measured by total assets of € 1,348 billion as of December 31, 2018. As of that

date, we employed 91,737 full-time equivalent internal employees and operated in 59 countries out of 2,064 branches worldwide, of which 68 % were in Germany. We offer a wide variety of investment, financial and related products and services to private individuals, corporate entities and institutional clients around the world.

As of December 31, 2018, we were organized into the following three corporate divisions:

- Corporate & Investment Bank (CIB)
- Private & Commercial Bank (PCB)
- Asset Management (AM)

The three corporate divisions are supported by infrastructure functions. In addition, Deutsche Bank has a local and regional organizational layer to facilitate a consistent implementation of global strategies.

We have operations or dealings with existing or potential customers in most countries in the world. These operations and dealings include working through:

- subsidiaries and branches in many countries;
- representative offices in many other countries; and
- one or more representatives assigned to serve customers in a large number of additional countries.

We have made the following significant capital expenditures or divestitures since January 1, 2016, that are not allocated to the capital expenditures or divestitures of corporate divisions described below:

In August 2016, Deutsche Bank Group entered into an agreement to sell Deutsche Bank S.A., its subsidiary in Argentina, to Banco Comafi S.A. The transaction is part of the Group's plan to rationalize its global footprint. In June 2017, the transaction was successfully completed.

On October 26, 2016, Deutsche Bank entered into an agreement to sell its Mexican bank and broker dealer subsidiaries to Investa Bank S.A., Institución de Banca Múltiple. Investa Bank S.A. has since been renamed to Accendo Banco. Closing of the transaction was originally expected in the first half of 2018, but remains subject to regulatory approvals and other customary conditions. During the fourth quarter of 2018, Deutsche Bank notified Accendo Banco that the Group is exercising its right to terminate the purchase agreement.

Capital expenditures or divestitures related to the divisions are included in the respective Corporate Division Overview.

Management Structure

The Management Board has structured the Group as a matrix organization, comprising (i) Corporate Divisions, (ii) Infrastructure Functions and (iii) Regions.

Pursuant to the German Stock Corporation Act, the Management Board is responsible for the executive management of Deutsche Bank. Its members are appointed and removed by the Supervisory Board, which is a separate corporate body. Our Management Board focuses on, among other topics, strategic management, corporate governance, financial accounting and reporting, resource allocation, control and risk management, and is assisted by functional committees.

Within each corporate division and region, coordination and management functions are handled by operating committees and executive committees, which help ensure that the implementation of the strategy of individual

business divisions and the plans for the development of infrastructure areas are aligned to our global business objectives.

Corporate & Investment Bank (CIB)

Corporate Division Overview

CIB comprises our Global Transaction Banking, Origination & Advisory, Sales & Trading (FIC) and Sales & Trading (Equity) businesses. The division brings together wholesale banking expertise across, coverage, risk management, sales and trading, Investment Banking and infrastructure across Deutsche Bank. This enables CIB to align resourcing and capital across our client and product perimeter to effectively serve the Bank's clients.

In CIB, we made the following significant capital divestiture since January 1, 2016 and no significant capital expenditures:

In early October 2017, Deutsche Bank Group signed a binding agreement to sell its Alternative Fund Services business, a unit of the Global Transaction Banking division, to Apex Group Limited. The transaction supported the Group's announced strategic priorities and was completed in the second quarter of 2018.

Products and Services

Global Transaction Banking (GTB) is a global provider of cash management, trade finance and securities services, delivering the full range of commercial banking products and services for both corporate clients and financial institutions worldwide.

Origination and Advisory is responsible for mergers and acquisitions (M&A) as well as debt and equity advisory and origination. Regional and industry-focused coverage teams ensure the delivery of the entire range of financial products and services to our corporate and institutional clients.

Sales & Trading (FIC) and Sales & Trading (Equity) combine sales, trading and structuring of a wide range of financial market products, including bonds, equities and equity-linked products, exchange-traded and over-the-counter derivatives, foreign exchange, money market instruments, and structured products, while Research provides analysis of markets, products and trading strategies for clients.

All our trading activities are covered by our risk management procedures and controls which are described in detail in the Risk Report.

Distribution Channels and Marketing

As part of our strategy, we are re-focusing and optimizing our client coverage model to the benefit of our core clients. We are exiting client relationships where we consider returns to be too low or risks to be too high while also strengthening our client on-boarding and know-your-client (KYC) procedures.

Coverage of our clients is provided by the Institutional and Treasury Coverage group, which combines our Equity and Debt sales teams, Financial Solutions Group and Corporate Banking Coverage. This new consolidated group is intended to benefit the division through closer cooperation and enhanced synergies leading to increased cross selling of products/solutions to our clients, while working closely with the Investment Banking Coverage team within Corporate Finance.

Private & Commercial Bank (PCB)

Corporate Division Overview

In PCB, we serve personal and private clients, small and medium-sized enterprises as well as wealthy private clients. We are organized along three core business divisions: Private and Commercial Business (Germany), Private and Commercial Business (International) and Wealth Management (Global). Our product range includes payment and account services, credit and deposit products as well as investment advice and selected digital offerings. In these products, we offer our customers both the coverage of all basic financial needs and individual, tailor-made solutions.

PCB made the following significant capital expenditures or divestitures since January 1, 2016:

In March 2018, Deutsche Bank Group entered into an agreement to sell the retail banking business in Portugal to ABANCA Corporación Bancaria S.A. The parties are aiming to close the transaction in the first half of 2019, subject to regulatory approvals and the finalization of separation measures.

In December 2017, Deutsche Bank Group entered into an agreement for the partial sale of its retail banking business in Poland to Santander Bank Polska (formerly Bank Zachodni WBK). The transaction was completed in November 2018.

In March 2017, Deutsche Bank Group signed a definitive agreement to sell its share in Concardis GmbH, a leading German payment service provider established in form of a joint venture of the German banking sector, to a consortium of Advent International and Bain Capital Private Equity. In July 2017, the transaction was successfully completed.

On December 28, 2015, we agreed to sell our entire 19.99 % stake in Hua Xia Bank Company Limited to PICC Property and Casualty Company Limited. The share transfer was completed in the fourth quarter 2016 and all remaining closing formalities were completed in the first quarter of 2017.

In the fourth quarter 2015, we announced that we had entered into a definitive asset purchase agreement to sell our U.S. Private Client Services (PCS) unit to Raymond James Financial, Inc. In September 2016 the transaction was completed successfully.

In November 2015, Visa Inc. announced a definitive agreement to acquire Visa Europe Limited. As part of this acquisition Visa Europe Limited requested all its shareholders, which included several Deutsche Bank Group entities, to return their shares against consideration. We returned our shares in Visa Europe Limited in January 2016 and received the cash and preferred shares consideration at closing on June 21, 2016 as well as an entitlement to a deferred cash payment including interest upon the third anniversary of the closing date.

Products and Services

In our Private and Commercial Business (Germany) division, we pursue a differentiated, customer-focused approach with two brands – “Deutsche Bank” and “Postbank”. With our “Deutsche Bank” brand we focus on providing our private customers with banking and financial products and services that include sophisticated and individual advisory solutions. For small and medium-sized corporate clients, we provide an integrated commercial banking coverage model in collaboration with the Corporate & Investment Bank. The focus of our “Postbank” brand remains on providing our retail and corporate customers with standard products and daily retail banking services. In cooperation with Deutsche Post DHL AG, we also offer postal and parcel services in the Postbank branches.

Our Private and Commercial Business (International) division provide banking and other financial services to private and commercial clients in Belgium, India, Italy and Spain with some variations in the product offering among countries that are driven by local market, regulatory and customer requirements.

The Wealth Management (Global) division serves wealthy, high-net-worth (HNW) and ultra-high-net-worth (UHNW) individuals and families. We support our clients in planning, managing and investing their wealth, financing their personal and business interests and servicing their institutional and corporate needs. We also provide institutional-like services for sophisticated clients and complement our offerings by closely collaborating with the Corporate & Investment Bank and Asset Management.

We also have consolidated activities, which are no longer part of our core businesses, into a separate unit (called “Exited Businesses”) and have established a Digital Ventures unit to holistically steer PCB’s digital agenda across businesses and brands, focusing on new platform-based digital business models, venture capital investments as well as end-to-end process digitalization and appropriate data architecture as a basis for structured data analysis and application of Artificial Intelligence.

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Distribution Channels and Marketing

We pursue an omni-channel approach and our customers can flexibly choose between different possibilities to access our services and products (branches, advisory centers, mobile networks of independent consultants and online/mobile banking).

In our Private and Commercial Business (Germany) and Private and Commercial Business (International) we have similar distribution channels. Those include our branch network, supported by customer call centers and self-service terminals; advisory centers of Deutsche Bank brand in Germany, which connect our branch network with our digital offerings; online and mobile banking including our Digital Platform, through which we provide a transaction platform for banking, brokerage and self-services, combined with a multi-mobile offering for smartphones and tablets; and lastly, financial advisors, as an additional service channel in collaboration with self-employed financial advisors as well as sales and cooperation partners.

Wealth Management (Global) has a distinct client coverage. Relationship managers and senior advisor teams manage client relationships, advice and assist clients in accessing wealth management services and open-architecture products. Institutional Wealth Partners (IWP) provide institutional access with market views and trade ideas from our Global Markets platform, as well as non-recourse lending solutions. Deutsche Oppenheim Family Offices AG (DOAG) offers services that include discretionary portfolio management, strategic asset allocation, “Family Office Strategy” funds, consulting, third-party manager selection, reporting & controlling as well as real estate and private equity investments.

Asset Management (AM)

Corporate Division Overview

With over € 660 billion of assets under management as of December 31, 2018, AM is one of the world’s leading investment management organizations, bringing access to the world’s financial markets and delivering solutions to clients around the globe. AM aims to provide sustainable financial solutions for all its clients: individual investors and the institutions that serve them.

The corporate division “Deutsche Asset Management” was renamed “Asset Management” during the first quarter of 2018. In March 2018, Deutsche Bank completed the partial initial public offering (IPO) of DWS Group GmbH & Co. KGaA (“DWS”), the holding company for AM. Since March 23, 2018, shares of DWS are listed on the Frankfurt stock exchange. We retain an 80 % ownership interest in DWS and AM remains a core business for Deutsche Bank.

We have made the following significant capital divestitures since January 1, 2016:

In December 2016, Deutsche Bank completed the sale of the Abbey Life business (Abbey Life Assurance Company Limited, Abbey Life Trustee Services Limited and Abbey Life Trust Securities Limited) to a subsidiary of Phoenix Group Holdings.

Products and Services

AM's investment capabilities span both active and passive strategies across a diverse array of asset classes and liquidity spectrum including equities, fixed income, liquidity, real estate, infrastructure, private equity and sustainable investments. We offer these capabilities through a variety of wrappers including Exchange Traded Funds, Mutual Funds, and Separately Managed Accounts. AM delivers alpha and beta solutions to address the longevity, liability and liquidity needs of clients, leveraging artificial intelligence and digital technology.

Distribution Channels and Marketing

Coverage/Advisory teams manage client relationships, provide advice and assist clients to access AM's products and services. AM also markets and distributes its offerings through other business divisions of Deutsche Bank Group, notably PCB for retail customers, as well as through third-party distributors. To ensure effective service and advice, all clients have a single point of access to AM, with dedicated teams serving specific client groups.

7

Non-Core Operations Unit Corporate Division (NCOU)

In the second half of 2012, the Non-Core Operations Unit (NCOU) was established with the aim to help the Bank reduce risks associated with capital-intensive assets that are not core to the strategy, thereby reducing capital demand. As set out in our previous strategy announcements, our objectives in setting up the NCOU were to improve external transparency of our non-core positions; to increase management focus on the core operating businesses by separating the non-core activities; and to facilitate targeted accelerated de-risking.

NCOU successfully executed its de-risking target and reduced the portfolio to less than € 10 billion RWA by the year-end 2016. As a result, the NCOU ceased to exist as a standalone division from 2017 onwards.

The remaining legacy assets with balance sheet value of approximately € 6 billion as of December 31, 2016 were transferred to the corresponding core operating segments, predominately Corporate & Investment Bank and Private & Commercial Bank.

The NCOU division made the following significant divestitures since January 1, 2016:

In November 2016, Deutsche Bank sold its remaining 16.9 % stake in Red Rock Resorts after an IPO in April 2016 where Deutsche Bank sold around 3 %.

In April 2016, Deutsche Bank reached an agreement to sell 100 % of Maher Terminals USA LLC in Port Elizabeth, New Jersey to Macquarie Infrastructure Partners III, a fund managed by Macquarie Infrastructure and Real Assets. Following receipt of all regulatory approvals, we completed the sale in November 2016 for U.S.\$ 739 million.

Infrastructure

The infrastructure functions perform control and service functions and, in particular, tasks relating to Group-wide, supra-divisional resource-planning, steering and control, as well as tasks relating to risk, liquidity and capital

management.

The infrastructure functions are organized into the following areas of responsibility of our senior management:

- Chief Executive Officer: Communications & Corporate Social Responsibility, Group Audit, Art, Culture & Sports
- Chief Financial Officer: Group and Regional Finance, Chief Accounting Officer, Group Tax and Treasury, Planning & Performance Management, Business and Infrastructure Finance (CFOs), Infrastructure Transformation, Investor Relations, Corporate Investments, Corporate Merger and Acquisitions
- Chief Risk Officer: Business Aligned Risk Management, Regional Risk Management, Enterprise Risk Management and Model Risk, Credit Risk Management, Market Risk Management & Risk Methodology, Non-Financial Risk Management, Treasury & Liquidity Risk Management and Corporate Insurance
- Chief Regulatory Officer: Government and Regulatory Affairs, Anti Financial Crime, Compliance, Business Selection and Conflict Office
- Chief Administrative Officer: Legal and Group Governance incl. Data Privacy, Human Resources including Corporate Executive Matters
- Chief Operating Officer: Chief Information Office, Chief Security Office, Chief Data Office, Digital Strategy & Innovation, Corporate Services, Operations CIB and Client Data Services

For the financial years until 2017, all expenses and revenues incurred within the infrastructure functions and areas are fully allocated to Corporate & Investment Bank, Private & Commercial Bank and Deutsche Asset Management. From 2018 onwards, Infrastructure expenses associated with shareholder activities as defined in the OECD Transfer Pricing Guidelines are no longer allocated to corporate divisions, but are held centrally and reported under Corporate & Other.

To increase overall effectiveness and collaboration, the bank decided in 2017 to move certain infrastructure employees to the divisions for which they provide service. This has helped to increase the business divisions' responsibility and autonomy with respect to their organizational and process-related decisions and led to a significant increase of the number of employees associated with the business divisions compared to 2016 – in particular in the Corporate & Investment Bank as well as in Deutsche Asset Management. Independent Control Functions generally remained in central areas.

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Significant Capital Expenditures and Divestitures

Information on each Corporate Division's significant capital expenditures and divestitures for the last three financial years has been included in the above descriptions of the Corporate Divisions.

Since January 1, 2018, there have been no public takeover offers by third parties with respect to our shares and we have not made any public takeover offers for our own account in respect of any other company's shares.

9

Results of Operations

Consolidated Results of Operations

On January 1, 2018, the Group adopted IFRS 9 "Financial Instruments", which replaces IAS 39, "Financial Instruments: Recognition and Measurement".

The adoption resulted in changes with regards to impairment as well as classification and measurement, leading to changes to the financial statements presentation. Changes to the financial statements presentation include the introduction of specific line items in the consolidated balance sheet and consolidated income statement, respectively, for Financial Assets at Fair Value through Other Comprehensive Income and the discontinuation of specific line items for Financial Assets Available for Sale and Securities Held to Maturity for financial years commencing January 1, 2018.

For further information regarding the adoption of IFRS 9, please refer to Note 2 “Recently Adopted and New Accounting Pronouncements” of this document.

You should read the following discussion and analysis in conjunction with the consolidated financial statements.

Condensed Consolidated Statement of Income

in € m.				2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
	2018	2017	2016	in € m.	in %	in € m.	in %
(unless stated otherwise)							
Net interest income	13,192	12,378	14,707	814	7	(2,329)	(16)
Provision for credit losses	525	525	1,383	(0)	(0)	(857)	(62)
Net interest income after provision for credit losses	12,667	11,853	13,324	815	7	(1,472)	(11)
Commissions and fee income ¹	10,039	11,002	11,744	(963)	(9)	(742)	(6)
Net gains (losses) on financial assets/liabilities at fair value through profit or loss ¹	1,332	2,926	1,401	(1,593)	(54)	1,524	109
Net gains (losses) on financial assets at amortized cost	2	N/A	N/A	2	N/M	0	N/M
Net gains (losses) on financial assets at fair value through other comprehensive income	317	N/A	N/A	317	N/M	0	N/M
Net gains (losses) on financial assets available for sale	N/A	479	653	(479)	N/M	(174)	(27)
Net income (loss) from equity method investments	219	137	455	82	60	(318)	(70)
Other income (loss)	215	(475)	1,053	689	N/M	(1,528)	N/M
Total noninterest income	12,124	14,070	15,307	(1,945)	(14)	(1,238)	(8)
Total net revenues ²	24,791	25,922	28,632	(1,131)	(4)	(2,709)	(9)
Compensation and benefits	11,814	12,253	11,874	(439)	(4)	380	3
General and administrative expenses	11,286	11,973	15,454	(687)	(6)	(3,481)	(23)
Policyholder benefits and claims	0	0	374	(0)	N/M	(374)	(100)
Impairment of goodwill and other intangible assets	0	21	1,256	(21)	N/M	(1,235)	(98)
Restructuring activities	360	447	484	(86)	(19)	(37)	(8)
Total noninterest expenses	23,461	24,695	29,442	(1,234)	(5)	(4,747)	(16)
Income (loss) before income taxes	1,330	1,228	(810)	103	8	2,038	N/M
Income tax expense (benefit)	989	1,963	546	(974)	(50)	1,417	N/M
Net income (loss)	341	(735)	(1,356)	1,077	N/M	621	(46)
Net income attributable to noncontrolling interests	75	15	45	59	N/M	(30)	(66)
	267	(751)	(1,402)	1,017	N/M	651	(46)

Net income (loss) attributable to Deutsche Bank
shareholders and additional equity components

N/M – Not meaningful

¹For further detail please refer to Note 1 “Significant Accounting Policies and Critical Accounting Estimates” of this report.

²After provision for credit losses.

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Net Interest Income

in € m.				2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
	2018	2017	2016	in € m.	in %	in € m.	in %
(unless stated otherwise)							
Total interest and similar income	24,793	23,542	25,143	1,251	5	(1,601)	(6)
Total interest expenses	11,601	11,164	10,436	437	4	728	7
Net interest income	13,192	12,378	14,707	814	7	(2,329)	(16)
Average interest-earning assets ¹	990,670	1,021,697	1,033,172	(31,028)	(3)	(11,475)	(1)
Average interest-bearing liabilities ¹	745,904	790,488	812,578	(44,584)	(6)	(22,090)	(3)
Gross interest yield ²	2.39 %	2.18 %	2.34 %	0.21 ppt	10	(0.16) ppt	(7)
Gross interest rate paid ³	1.41 %	1.25 %	1.17 %	0.16 ppt	13	0.08 ppt	7
Net interest spread ⁴	0.98 %	0.93 %	1.17 %	0.05 ppt	5	(0.24) ppt	(21)
Net interest margin ⁵	1.33 %	1.21 %	1.42 %	0.12 ppt	10	(0.21) ppt	(15)

ppt – Percentage points

¹Average balances for each year are calculated in general based upon month-end balances.

²Gross interest yield is the average interest rate earned on our average interest-earning assets.

³Gross interest rate paid is the average interest rate paid on our average interest-bearing liabilities.

⁴Net interest spread is the difference between the average interest rate earned on average interest-earning assets and the average interest rate paid on average interest-bearing liabilities.

⁵Net interest margin is net interest income expressed as a percentage of average interest-earning assets.

2018

Net interest income was € 13.2 billion in 2018 compared to € 12.4 billion in 2017, an increase of € 814 million, or 7 %. The increase in Net interest income was primarily driven by higher average rates, resulting in an improved net interest spread compared to 2017. Interest income increased primarily due to higher average rates on loans and deposits with banks, mainly in the US and Asia, while total interest expenses also increased, but to a lesser extent. Also contributing to the increase in Net interest income was a more pronounced reduction of average interest-bearing liabilities than average interest-earning assets. The decline in balance sheet volume occurred mostly in CIB reflecting the division’s strategic repositioning. Interest income included € 93 million related to EU government grants under the Targeted

Longer-Term Refinancing Operations II (TLTRO II) program, compared to € 116 million in 2017. Overall, the bank's net interest margin improved by 12 basis points compared to the prior year to 1.33 %, in 2018.

2017

Net interest income was € 12.4 billion in 2017 compared to € 14.7 billion in 2016, a decrease of € 2.3 billion, or 16 %. The decline in net interest income was mainly driven by perimeter changes including the sale of Abbey Life, PCS and the disposal of assets within the Non-Core Operations Unit (NCOU) in 2016, as well as higher funding costs and overall portfolio effects resulting in a shift towards lower interest yielding asset classes, mainly euro deposits with central banks. These effects were partially offset by interest income of € 116 million related to EU government grants under the TLTRO II program. Overall, our net interest margin declined by 21 basis points in 2017 as compared to the prior year.

Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss

in € m.				2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
	2018	2017	2016	in € m.	in %	in € m.	in %
(unless stated otherwise)							
Trading income	52	3,374	547	(3,322)	(98)	2,827	N/M
Net gains (losses) on non-trading financial assets mandatory at fair value through profit or loss	212	N/A	N/A	212	N/M	0	N/M
Net gains (losses) on financial assets/liabilities designated at fair value through profit or loss	1,069	(448)	854	1,517	N/M	(1,302)	N/M
Total net gains (losses) on financial assets/liabilities at fair value through profit or loss	1,332	2,926	1,401	(1,593)	(54)	1,524	109

2018

Net gains on financial assets/liabilities at fair value through profit or loss were € 1.3 billion in 2018, compared to € 2.9 billion in 2017. The decrease of € 1.6 billion, or 54 %, was primarily driven by mark-to-market losses due to higher US interest rates. These losses were partly offset by related positive effects in Net interest income. Net gains on financial assets/liabilities at fair value through profit or loss in 2018 were also impacted by lower deal volumes resulting from challenging market conditions and adverse developments.

2017

Net gains on financial assets/liabilities at fair value through profit or loss were € 2.9 billion in 2017 compared to € 1.4 billion in 2016, an increase of € 1.5 billion or 109 %. The increase was primarily driven by trading income, which improved by € 2.8 billion, mainly due to the non-recurrence of de-risking losses within the NCOU in 2016. Mark-to-market losses on issuances designated at fair value through profit or loss were the main contributor to a loss of € 448 million on financial assets/liabilities designated at fair value through profit or loss in 2017 compared to a gain of € 854 million in 2016. This loss was largely offset by mark-to-market gains in trading income related to financial instruments used as hedges for those issuances.

Net Interest Income and Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss

Our trading and risk management businesses include significant activities in interest rate instruments and related derivatives. Under IFRS, interest and similar income earned from trading instruments and financial instruments designated at fair value through profit or loss (i.e., coupon and dividend income) and the costs of funding net trading positions are part of net interest income. Our trading activities can periodically shift income between net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss depending on a variety of factors, including risk management strategies.

In order to provide a more business-focused discussion, the following table presents net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss by corporate division.

in € m.				2018 increase (decrease) from		2017 increase (decrease)	
	2018	2017	2016	2017	in %	from 2016	in %
(unless stated otherwise)				in € m.	in %	in € m.	in %
Net interest income	13,192	12,378	14,707	814	7	(2,329)	(16)
Total net gains (losses) on financial assets/liabilities at fair value through profit or loss	1,332	2,926	1,401	(1,593)	(54)	1,524	109
Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	14,524	15,304	16,108	(779)	(5)	(805)	(5)
Breakdown by Corporate Division:1							
Corporate & Investment Bank	7,905	8,651	10,774	(746)	(9)	(2,122)	(20)
Private & Commercial Bank	6,283	6,158	6,420	125	2	(262)	(4)
Asset Management	(89)	30	365	(119)	N/M	(335)	(92)
Non-Core Operations Unit	N/A	N/A	(1,307)	0	N/M	1,307	N/M
Corporate & Other	425	464	(144)	(39)	(8)	608	N/M
Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	14,524	15,304	16,108	(779)	(5)	(805)	(5)

N/M – Not meaningful

1This breakdown reflects net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss only. For a discussion of the corporate divisions' total revenues by product please refer to Note 4 "Business Segments and Related Information".

2018

Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss were € 14.5 billion in 2018, compared to € 15.3 billion in 2017, a decrease of € 779 million, or 5%. The decrease was primarily driven by CIB mainly reflecting the strategic repositioning, muted client activity, geo-political uncertainty across a number of regions, and adverse developments. In addition, total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss in AM decreased versus the prior year mainly driven by a change in valuation of guaranteed funds which has a related offset in Other Income. The decreases were partly offset by an increase in PCB primarily due to growth in loan revenues, positive valuation effects from home savings liabilities, a positive year-on-year impact from mortgage loans previously measured at fair value and measured at amortized cost basis since the adoption of IFRS 9, partly offset by the negative impact from a low interest rate environment on deposits and lower income from interest rate risk hedges.

2017

Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss were € 15.3 billion in 2017, compared to € 16.1 billion in 2016, a decrease of € 805 million, or 5 %. The decrease was primarily driven by CIB, mainly due to lower client volumes from a low volatility environment as well as margin pressure. The decline also included a loss of € 348 million in debt valuation adjustments (DVA) from the tightening of credit spreads and a decrease in derivative liability exposures. In addition, Total net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss decreased also in AM, mainly due to nonrecurring revenues from Abbey Life which was sold at the end of 2016 and the absence of a write-up of our exposure to HETA; and in PCB, mainly impacted by the persistent low interest rate environment and loan book reductions. Partly offsetting these decreases was NCOU, which ceased to exist from 2017 onwards and reported negative € 1.3 billion of Total net interest income and net gains (losses) on financial assets/ liabilities at fair value through profit or loss in 2016, including the aforementioned de-risking losses.

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Provision for Credit Losses**2018**

Provision for credit losses was € 525 million in 2018, unchanged as compared to 2017. Provisions in CIB decreased by € 94 million driven by de-risking activities in the shipping portfolio, offset by an increase of € 93 million in PCB, mainly driven by Postbank reflecting the non-recurrence of prior year's release of provisions related to a single credit exposure. The low level of provisions for credit losses reflects our strong underwriting standards, the low risk nature of our portfolios and the benign operating environment.

2017

Provision for credit losses was € 525 million in 2017, a decrease of € 857 million, or 62 %, compared to 2016, as a result of significantly lower charges and higher releases in all divisions. In CIB, the improvement reflected better performance of all portfolios including shipping. Despite the year-over-year reduction, shipping continued to be the main driver of provision for credit losses in 2017, in part related to the re-evaluation of the respective impairment method during the year. In PCB, provision for credit losses improved, reflecting the good portfolio quality and the continued benign environment along with a significant release in Postbank.

Remaining Noninterest Income

in € m.				2018 increase		2017 increase	
	2018	2017	2016	(decrease) from 2017	(decrease) from 2016	(decrease) from 2017	(decrease) from 2016
(unless stated otherwise)	2018	2017	2016	in € m.	in %	in € m.	in %
Commissions and fee income ¹	10,039	11,002	11,744	(963)	(9)	(742)	(6)
Net gains (losses) on financial assets at fair value through other comprehensive income	317	N/A	N/A	317	N/M	0	N/M
Net gains (losses) on financial assets at amortized cost	2	N/A	N/A	2	N/M	0	N/M
Net gains (losses) on financial assets available for sale	N/A	479	653	(479)	N/M	(174)	(27)
Net income (loss) from equity method investments	219	137	455	82	60	(318)	(70)
Other income (loss)	215	(475)	1,053	689	N/M	(1,528)	N/M
Total remaining noninterest income	10,792	11,144	13,906	(352)	(3)	(2,762)	(20)

1 includes:

Commissions and fees from fiduciary activities:

Commissions for administration	303	338	401	(35)	(10)	(63)	(16)
Commissions for assets under management	3,130	3,603	3,507	(473)	(13)	96	3
Commissions for other securities business	290	379	380	(88)	(23)	(1)	(0)
Total	3,724	4,320	4,287	(596)	(14)	33	1

Commissions, broker's fees, mark-ups on securities underwriting and other securities activities:

Underwriting and advisory fees	1,629	1,825	1,871	(196)	(11)	(46)	(2)
Brokerage fees	936	1,160	1,434	(224)	(19)	(274)	(19)
Total	2,565	2,985	3,305	(420)	(14)	(320)	(10)
Fees for other customer services	3,751	3,698	4,152	53	1	(454)	(11)
Total commissions and fee income	10,039	11,002	11,744	(963)	(9)	(742)	(6)

N/M – Not meaningful

Commissions and fee income

2018

Total Commissions and fee income was € 10.0 billion in 2018, a decrease of € 963 million, or 9 %, as compared to 2017. The decrease included € 473 million lower commissions for assets under management, primarily in AM due to lower fees from actively managed funds partly offset by higher fees from passively managed funds. Underwriting and advisory fees and brokerage fees declined by € 420 million primarily driven by lower market volumes and lower level of client activities in CIB as well as lower revenues from investment products in PCB following the implementation of MiFID II regulations.

2017

Total Commissions and fee income was € 11.0 billion in 2017, a decrease of € 742 million, or 6 %, compared to 2016. Underwriting and advisory fees and brokerage fees declined by € 320 million and fees from other customer services declined by € 454 million driven by reduced perimeter and lower volumes in Global Transaction Banking as well as reduced volumes in Sales & Trading (Equity). Fee income in PCB declined primarily reflecting the sale of the PCS business. Fund management fees increased by € 96 million primarily driven by favorable market conditions in AM.

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Net gains (losses) on financial assets at fair value through other comprehensive income

2018

Total Net gains (losses) on financial assets at fair value through other comprehensive income was € 317 million in 2018 primarily related to a realized gain on sales of municipal bonds in the US, government bonds and securities from our Strategic Liquidity Reserve.

2017

Total Net gains (losses) on financial assets at fair value through other comprehensive income was introduced as new income category in 2018, following the adoption of IFRS 9.

Net gains (losses) on financial assets at amortized cost

2018

Net gains (losses) on financial assets at amortized cost were € 2 million in 2018, primarily reflecting the impact of an early redemption of certain bonds.

2017

Net gains (losses) on financial assets at amortized cost was introduced as new income category in 2018, following the adoption of IFRS 9.

Net gains (losses) on financial assets available for sale

2018

Net gains (losses) on financial assets available for sale ceased to exist in 2018, following the adoption of IFRS 9.

2017

Net gains on financial assets available for sale were € 479 million in 2017 compared to € 653 million in 2016, a decrease of € 174 million or 27 %. The decrease was primarily due to the nonrecurrence of gains related to de-risking activities in NCOU and a gain on sale of stake in Visa Europe Limited, both in 2016. This was partly offset by a gain on sale of shares in Concardis GmbH in 2017.

Net income (loss) from equity method investments

2018

Net gains from equity method investments were € 219 million in 2018 compared to € 137 million in 2017, an increase of € 82 million, or 60 %, primarily due to change in valuation of an investment.

2017

Net gains from equity investments were € 137 million in 2017 compared to € 455 million in 2016, a decrease of € 318 million, or 70 %, primarily due to the non-recurrence of a gain from the IPO of Red Rock Resorts in NCOU.

Other income (loss)

2018

Other income (loss) was € 215 million in 2018 compared to a loss of € 475 million in 2017. The increase was primarily driven by de-designation in fair value hedge accounting, gains from property sales in PCB, interest rate hedges and the termination of certain swaps. Additionally other income includes a positive impact from the valuation of guaranteed funds in AM, which has a related offset in net gains (losses) on financial assets/liabilities at fair value through profit or loss. Other income also benefitted from the absence of negative prior year effects related to the termination of a legacy trust preferred security and the realization of a currency translation adjustment associated with the sale of our non-strategic subsidiary in Argentina as well as a lower negative impacts from the sales transactions in Poland and Portugal compared to the prior year. These effects were partly offset by a lower income from workout activities related to legacy positions in Sal. Oppenheim in 2018.

2017

Other income (loss) was negative € 475 million in 2017 compared to positive € 1.1 billion in 2016. The decline was primarily driven by the absence of a positive realization in Other comprehensive income from the sale of stake in Hua Xia Bank Co. Limited. The decline also included a negative impact from the agreement to sell a significant portion of the retail business in Poland, a one-off loss due to termination of a legacy trust preferred security as well as the realization of a negative currency translation adjustment associated with the sale of our non-strategic subsidiary in Argentina.

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Noninterest Expenses

in € m.				2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
	2018	2017	2016	in € m.	in %	in € m.	in %
(unless stated otherwise)							
Compensation and benefits	11,814	12,253	11,874	(439)	(4)	380	3
General and administrative expenses ¹	11,286	11,973	15,454	(687)	(6)	(3,481)	(23)
Policyholder benefits and claims	0	0	374	(0)	N/M	(374)	(100)
Impairment of goodwill and other intangible assets	0	21	1,256	(21)	N/M	(1,235)	(98)
Restructuring activities	360	447	484	(86)	(19)	(37)	(8)
Total noninterest expenses	23,461	24,695	29,442	(1,234)	(5)	(4,747)	(16)
N/M – Not meaningful							
¹ includes:							
IT costs	3,822	3,816	3,872	6	0	(56)	(1)
Regulatory, tax & insurance ^{2,3}	1,545	1,489	1,421	57	4	67	5
Occupancy, furniture and equipment expenses	1,723	1,849	1,972	(126)	(7)	(123)	(6)
Professional service fees	1,530	1,750	2,305	(220)	(13)	(555)	(24)
Communication and data services	636	686	761	(50)	(7)	(75)	(10)
Travel and representation expenses	347	405	450	(58)	(14)	(45)	(10)
Banking and transaction charges	753	744	664	9	1	80	12
Marketing expenses	278	309	285	(30)	(10)	24	8
Consolidated investments	0	0	334	0	N/M	(334)	N/M
Other expenses ⁴	652	925	3,390	(274)	(30)	(2,465)	(73)
Total general and administrative expenses	11,286	11,973	15,454	(687)	(6)	(3,481)	(23)

²Regulatory, tax & insurance which comprises bank levy and insurance and deposit protection has been presented separately in order to provide further transparency. In the Annual Report for the year ended December 31, 2017, these expenses were included within Other expenses.

³Includes bank levy of € 690 million in 2018, € 596 million in 2017 and € 547 million in 2016.

⁴Includes litigation related expenses of € 88 million in 2018, € 213 million in 2017 and € 2.4 billion in 2016.

Compensation and benefits

2018

Compensation and benefits decreased by € 439 million, or 4 %, to € 11.8 billion in 2018 compared to € 12.3 billion in 2017. The decrease was primarily driven by lower salary expenses reflecting headcount reductions and lower variable compensation.

2017

Compensation and benefits increased by € 380 million, or 3 %, to € 12.3 billion in 2017 compared to € 11.9 billion in 2016. The increase was primarily driven by higher variable compensation, reflecting the return to normal compensation programs in 2017. This increase was partly offset by a decrease in salaries, due to lower headcount and favorable foreign exchange movements, and by lower amortization of prior years' deferrals as well as by lower severance expense.

General and administrative expenses

2018

General and administrative expenses decreased by € 687 million, or 6 %, to € 11.3 billion in 2018 compared to € 12.0 billion in 2017. The decrease was across most expense categories primarily reflecting management actions to optimize spending.

2017

General and administrative expenses decreased by € 3.5 billion, or 23 %, to € 12.0 billion in 2017 compared to € 15.5 billion in 2016. The decrease was mainly due to a € 2.2 billion reduction in litigation charges compared to 2016. Professional service fees declined by € 555 million driven by lower legal fees and lower business consulting cost.

Impairment of goodwill and other intangible assets

2018

No impairment charges were reported for 2018.

2017

Impairment charges on goodwill and other intangible assets decreased to € 21 million in 2017 from € 1.3 billion in 2016. The 2016 charge reflected an impairment of € 1.0 billion in AM, triggered by the sale of Abbey Life and an impairment of € 285 million in CIB following the transfer of certain businesses from AM.

Restructuring

2018

Restructuring expenses amounted to € 360 million in 2018 compared to € 447 million in 2017. The decrease was mainly driven by lower charges in PCB partially offset by higher expenses in CIB reflecting the higher spend from strategic repositioning.

2017

Restructuring expenses amounted to € 447 million in 2017 compared to € 484 million in 2016. Restructuring charges for 2017 were primarily related to the planned merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank.

Income Tax Expense

2018

Income tax expense in 2018 was € 989 million compared to € 2.0 billion in 2017. The effective tax rate of 74 % (2017: 160 %) was mainly impacted by changes in the recognition and measurement of deferred tax assets and share based payment related tax effects.

2017

Income tax expense in 2017 was € 2.0 billion compared to € 546 million in 2016. The effective tax rate of 160 % (2016: negative 67 %) was mainly impacted by a one-time charge of € 1.4 billion resulting from the U.S. tax reform and other changes in the recognition and measurement of deferred tax assets.

Net income (loss)

2018

The net income of € 341 million in 2018, compared to a net loss of € 735 million in 2017, was primarily driven by the non-recurrence of the aforementioned one-time tax charge and lower noninterest expenses.

2017

The 2017 result was a net loss of € 735 million, driven by the aforementioned one-time tax charge attributable to the re-measurement of US deferred tax assets as a result of the U.S. tax reform, compared to a net loss of € 1.4 billion in 2016.

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Segment Results of Operations

The following is a discussion of the results of our business segments. See Note 4 “Business Segments and Related Information” to the consolidated financial statements for information regarding:

- changes in the format of our segment disclosure and
- the framework of our management reporting systems.

The criterion for segmentation into divisions is our organizational structure as it existed at December 31, 2018. Prior period comparables were restated due to changes in the divisional structure. Segment results were prepared in accordance with our management reporting systems.

	2018					
in € m. (unless stated otherwise)	Corporate & Investment	Private & Commercial	Asset Management	Non-Core Operations	Corporate & Other	Total Consolidated

2017

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	Bank	Bank		Unit		
Net revenues ¹	13,046	10,158	2,186	–	(73)	25,316
Provision for credit losses	120	406	(1)	–	0	525
Noninterest expenses						
Compensation and benefits	3,970	4,001	787	–	3,055	11,814
General and administrative expenses	8,115	4,867	929	–	(2,624)	11,286
Policyholder benefits and claims	0	0	0	–	0	0
Impairment of goodwill and other intangible assets	0	0	0	–	0	0
Restructuring activities	287	55	19	–	0	360
Total noninterest expenses	12,372	8,923	1,735	–	431	23,461
Noncontrolling interests	24	(0)	85	–	(109)	0
Income (loss) before income taxes	530	829	367	–	(396)	1,330
Cost/income ratio	95 %	88 %	79 %	–	N/M	93 %
Assets ²	988,531	343,704	10,030	–	5,872	1,348,137
Additions to non-current assets	514	516	43	–	575	1,647
Risk-weighted assets ³	236,306	87,709	10,365	–	16,053	350,432
CRD 4 leverage exposure measure (spot value at reporting date)	892,653	354,584	5,044	–	20,644	1,272,926
Average shareholders' equity	43,427	14,514	4,669	–	0	62,610
Post-tax return on average tangible shareholders' equity ⁴	1 %	5 %	18 %	–	N/M	1 %
Post-tax return on average shareholders' equity ⁴	1 %	4 %	6 %	–	N/M	0 %
1 includes:						
Net interest income	3,574	6,077	(52)	–	3,592	13,192
Net income (loss) from equity method investments	170	2	41	–	6	219

2 includes:

Equity method investments	556	78	240	–	5	879
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N/M – Not meaningful

3Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.

4The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was 74 % for the year ended December 31, 2018. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 28 % for the year ended December 31, 2018.

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	2017					
in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	Total Consolidated
Net revenues ¹	14,227	10,178	2,532	–	(489)	26,447
Provision for credit losses	213	313	(1)	–	(0)	525
Noninterest expenses						
Compensation and benefits	4,364	4,027	812	–	3,050	12,253
General and administrative expenses	8,441	5,012	978	–	(2,458)	11,973
Policyholder benefits and claims	0	0	0	–	0	0
Impairment of goodwill and other intangible assets	6	12	3	–	0	21
Restructuring activities	81	360	6	–	0	447
Total noninterest expenses	12,892	9,411	1,799	–	593	24,695
Noncontrolling interests	26	(12)	1	–	(16)	0
Income (loss) before income taxes	1,096	465	732	–	(1,066)	1,228
Cost/income ratio	91 %	93 %	71 %	–	N/M	93 %
Assets ²	1,127,028	333,069	8,050	–	6,586	1,474,732
Additions to non-current assets	125	551	60	–	1,067	1,803
Risk-weighted assets ³	231,574	87,472	8,432	–	16,734	344,212

CRD 4 leverage exposure measure (spot value at reporting date)	1,029,946	344,087	2,870	–	17,983	1,394,886
Average shareholders' equity	44,197	14,943	4,687	–	99	63,926
Post-tax return on average tangible shareholders' equity ⁴	2 %	2 %	56 %	–	N/M	(1) %
Post-tax return on average shareholders' equity ⁴	2 %	2 %	10 %	–	N/M	(1) %
1 includes:						
Net interest income	4,104	5,875	(19)	–	2,418	12,378
Net income (loss) from equity method investments	81	3	44	–	9	137
2 includes:						
Equity method investments	553	91	211	–	10	866
N/M – Not meaningful						

³Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.

⁴The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was 160 % for the year ended December 31, 2017. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 33 % for the year ended December 31, 2017.

in € m. (unless stated otherwise)	2016					
	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Non-Core Operations Unit	Corporate & Other	Total Consolidated
Net revenues ¹	16,764	11,090	3,015	(382)	(473)	30,014
Provision for credit losses	816	439	1	128	(0)	1,383
Noninterest expenses						
Compensation and benefits	4,062	4,075	737	68	2,931	11,874
General and administrative expenses	9,280	4,888	1,026	2,659	(2,398)	15,454
Policyholder benefits and claims	0	0	374	0	0	374
	285	0	1,021	(49)	(0)	1,256

Impairment of goodwill and other intangible assets						
Restructuring activities	299	142	47	4	(7)	484
Total noninterest expenses	13,926	9,104	3,205	2,682	525	29,442
Noncontrolling interests	49	0	0	(4)	(46)	0
Income (loss) before income taxes	1,973	1,547	(190)	(3,187)	(952)	(810)
Cost/income ratio	83 %	82 %	106 %	N/M	N/M	98 %
Assets ²	1,201,894	329,869	12,300	5,523	40,959	1,590,546
Additions to non-current assets	22	480	1	0	1,517	2,019
Risk-weighted assets ³	237,596	86,082	8,960	9,174	15,706	357,518
CRD 4 leverage exposure measure (spot value at reporting date)	954,203	342,424	3,126	7,882	40,018	1,347,653
Average shareholders' equity	40,312	14,371	4,460	690	2,249	62,082
Post-tax return on average tangible shareholders' equity ⁴	3 %	8 %	71 %	N/M	N/M	(3) %
Post-tax return on average shareholders' equity ⁴	3 %	7 %	(3) %	N/M	N/M	(2) %
1 includes:						
Net interest income	6,314	6,201	326	142	1,724	14,707
Net income (loss) from equity method investments	138	5	44	269	(1)	455
2 includes:						
Equity method investments	698	23	203	98	4	1,027

N/M – Not meaningful

³Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.

⁴The post-tax return on average tangible shareholders' equity and average shareholders' equity at the Group level reflects the reported effective tax rate for the Group, which was (67) % for the year ended December 31, 2016. For the post-tax return on average tangible shareholders' equity and average shareholders' equity of the segments, the Group effective tax rate was adjusted to exclude the impact of permanent differences not attributed to the segments, so that the segment tax rates were 35 % for the year ended December 31, 2016.

Corporate & Investment Bank

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
				in € m.	in %	in € m.	in %
Net revenues							
Global Transaction Banking	3,834	3,917	4,419	(83)	(2)	(502)	(11)
Equity Origination	362	396	405	(34)	(9)	(9)	(2)
Debt Origination	1,081	1,327	1,393	(247)	(19)	(66)	(5)
Advisory	493	508	495	(16)	(3)	13	3
Origination and Advisory	1,935	2,232	2,292	(296)	(13)	(60)	(3)
Sales & Trading (Equity)	1,957	2,233	2,751	(276)	(12)	(518)	(19)
Sales & Trading (FIC)	5,361	6,447	7,066	(1,087)	(17)	(619)	(9)
Sales & Trading	7,317	8,680	9,817	(1,363)	(16)	(1,137)	(12)
Other	(40)	(601)	235	561	(93)	(836)	N/M
Total net revenues	13,046	14,227	16,764	(1,181)	(8)	(2,537)	(15)
Provision for credit losses	120	213	816	(94)	(44)	(603)	(74)
Noninterest expenses							
Compensation and benefits	3,970	4,364	4,062	(393)	(9)	302	7
General and administrative expenses	8,115	8,441	9,280	(326)	(4)	(839)	(9)
Impairment of goodwill and other intangible assets	0	6	285	(6)	N/M	(279)	(98)
Restructuring activities	287	81	299	205	N/M	(218)	(73)
Total noninterest expenses	12,372	12,892	13,926	(520)	(4)	(1,034)	(7)
Noncontrolling interests	24	26	49	(2)	(7)	(23)	(46)
Income (loss) before income taxes	530	1,096	1,973	(566)	(52)	(877)	(44)
Cost/income ratio	95 %	91 %	83 %	N/M	4 ppt	N/M	8 ppt
Assets ¹	988,531	1,127,028	1,201,894	(138,497)	(12)	(74,866)	(6)
Risk-weighted assets ²	236,306	231,574	237,596	4,733	2	(6,022)	(3)
Average shareholders' equity ³	43,427	44,197	40,312	(770)	(2)	3,885	10
Post-tax return on average tangible shareholders' equity	1 %	2 %	3 %	N/M	(1) ppt	N/M	(2) ppt
Post-tax return on average shareholders' equity	1 %	2 %	3 %	N/M	(1) ppt	N/M	(2) ppt

N/M – Not meaningful

¹Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.

²Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.

3See Note 4 “Business Segments and Related Information” to the consolidated financial statements for a description of how average shareholders' equity is allocated to the divisions.

2018

In 2018, CIB announced, initiated and completed headcount and resource reductions as part of the division's strategic reshaping. This reshaping had a negative near term impact on revenues, but allowed the division to reduce leverage exposure and refocus on areas of strength. CIB income before income taxes for the full year 2018 was € 530 million or 52 % lower than the prior year. The decrease year over year was mainly driven by lower revenues, and higher restructuring costs, partly offset by lower compensation and benefits, general and administrative expenses and provisions for credit losses.

CIB net revenues for the full year 2018 were € 13 billion, a decrease of € 1.2 billion or 8 % compared to the full year 2017.

Global Transaction Banking net revenues were € 3.8 billion, a decrease of € 83 million or 2 % compared to 2017. Cash Management revenues were slightly lower, as a result of client perimeter reductions in 2017 and continued negative interest rates in Europe. However the business saw sequential revenue growth quarter-on-quarter through 2018. Trade revenues were slightly lower, specifically in structured products due to ongoing margin compression, while the underlying flow business showed positive development. Trust, Agency and Securities Services revenues were higher driven by a gain on sale on an asset disposal in the second quarter of 2018 and benefitted from higher interest rates in the U.S.

Origination and Advisory net revenues were € 1.9 billion, a € 296 million or 13 % decrease compared to the prior year. Debt Origination revenues were € 247 million or 19 % lower in a significantly reduced fee pool environment, despite significant market share gains in leveraged loans. Equity Origination revenues were € 34 million or 9 % lower. Advisory revenues were essentially flat compared to 2017.

Sales & Trading (FIC) net revenues were € 5.4 billion, a decrease of € 1.1 billion or 17 %. Rates revenues were significantly lower compared to the prior year, in particular in Europe with lower levels of client activity and the impact of the strategic reshaping in the U.S. Credit revenues were lower compared to a strong prior year. Foreign Exchange revenues were essentially flat. Revenues in Emerging Markets were lower due to underperformance in Latin America, specifically in the flow business, partly offset by an improvement in Eastern Europe, Middle East and Africa. Foreign Exchange and Rates revenues in Asia Pacific were lower due to performance in Japan and Australia, partly offset by strong revenues in Asia.

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Sales & Trading (Equity) net revenues were € 2.0 billion, a decrease of € 276 million, or 12 %. Revenues in Prime Finance were slightly lower. Equity Derivatives revenues were slightly lower due to reduced client flow across both Europe and Asia Pacific, partly offset by a solid performance in the U.S., which benefitted from increased volatility in the first quarter of 2018. Cash Equity revenues were lower due to facilitation losses in the Americas and the non-recurrence of gains on asset sales in the previous year.

Other net revenues were negative € 40 million, compared to negative € 601 million in 2017. The year over year improvement was driven by a gain of € 126 million (2017: a loss of € 348 million) relating to the impact of DVA on certain derivative liabilities. The non-recurrence of negative revenue events relating to assets identified as not consistent with CIB's strategy also impacted the year-on-year comparison. Investment grade lending revenues were essentially flat compared to 2017.

Provision for credit losses were € 120 million compared to € 213 million in the prior year. In the first half of 2018 de-risking on our shipping portfolio made further progress, while the benign macro-economic environment throughout the majority of the year supported the low level of net provisions. The fourth quarter of 2018 did see an increase mainly due to higher Stage 1 & 2 provisions. This was due to a weakening macro-economic outlook, which has an impact due to the forward looking information element of IFRS 9, in addition to a one-off adjustment to the calculation methodology on certain loans on which we hold insurance protection.

Non-interest expenses in 2018 were € 12.4 billion, a decrease of € 520 million or 4 % compared to the prior year. The decrease was driven by lower compensation and benefits costs across both fixed and variable compensation reflecting the strategic headcount actions. Non compensation costs were also lower across a number of line items due to continued cost discipline. The cost reductions were partially offset by increased restructuring costs.

2017

CIB Income before income taxes in 2017 of € 1.1 billion was € 877 million or 44 % lower than in the previous year. The period-over-period reduction in revenues was only partially offset by reduced noninterest expenses and lower credit loss provisions.

CIB net revenues for the full year 2017 were € 14.2 billion, a decrease of € 2.5 billion, or 15 % year-on-year.

Global Transaction Banking net revenues were € 3.9 billion, a decrease of € 502 million, or 11 %. Cash Management revenues were slightly lower, as interest rate increases in the U.S. partly offset the negative impact of client and product perimeter reductions initiated in 2016. Trade revenues were lower, driven by active balance sheet management efforts and continued margin pressure. Trust, Agency and Securities Services revenues were essentially flat, as lower transaction volumes due to client and country exits were offset by interest rate increases in the U.S. In addition, GTB revenues were negatively impacted by a change in funding charges allocation methodology in 2017.

Origination and Advisory revenues were € 2.2 billion, a € 60 million, or 3 % decrease compared to the prior year. Equity Origination revenues decreased by € 9 million or 2 %. Debt Origination revenues were € 66 million or 5 % lower, with a strong first quarter of 2017 supported by high inflows into the Leveraged Loan market, offset by slightly lower revenues during the remainder of 2017 amid lower client activity and Deutsche Bank's reduced risk appetite in the U.S. Advisory revenues were € 13 million or 3 % higher driven by a robust market and strong deal participation.

Sales & Trading (FIC) net revenues were € 6.4 billion, a decrease of € 619 million, or 9 %. Credit revenues were essentially flat supported by strong performance in distressed products in the first half of 2017, offset by less favorable trading conditions for flow businesses in the second half of 2017. Rates revenues were higher with solid performance in Europe, partly offset by a weaker performance in the U.S. Foreign Exchange revenues were significantly lower as a persistently low volatility environment impacted client flows. Asia Pacific Foreign Exchange and Rates revenues decreased with a strong first quarter of 2017 offset by lower client activity during the remainder of the year. Emerging Markets revenues were significantly lower due to subdued client flow and specific developments in Venezuela, South Africa and Turkey towards the end of the year.

Sales & Trading (Equity) net revenues were € 2.2 billion, a decrease of € 518 million, or 19 %. Revenues in Prime Finance were lower reflecting lower average balances during the year, reduced margins and higher funding cost. Equity Derivatives revenues were lower with a challenging trading environment particularly in the second half of 2017. Cash Equities revenues were essentially flat with volumes remaining challenged.

Other revenues were negative € 601 million, compared to a gain of € 235 million in 2016. 2017 included a loss of € 348 million (2016: a gain of € 27 million) relating to the impact of DVA on certain derivative liabilities. € 136 million of this loss was driven by a change in the creditor hierarchy in the event of a bank insolvency which was introduced by the German Resolution Mechanism Act (Abwicklungsmechanismengesetz), effective January 1, 2017. This hierarchy change results in derivative counterparties receiving greater protection as they would be satisfied prior to senior unsecured debt holders in the creditor waterfall structure. This greater protection increases the value of the derivative assets for the counterparty, thereby increasing the value of derivative liabilities on our balance sheet, resulting in the loss. Revenues associated with assets identified as not consistent with CIB's strategy are reported under 'Other' as of the second quarter of 2017, including a negative impact related to the valuation of the legacy RMBS portfolio.

Provision for credit losses of € 213 million were down 74 % year-on-year. The decrease resulted primarily from reductions across all portfolios, including shipping. Despite the year-over-year reduction, shipping continued to be the main driver of provision for credit losses in 2017.

Noninterest expenses of € 12.9 billion, were € 1.0 billion, or 7 % lower than in 2016. Reduced litigation provisions, materially lower goodwill impairment and lower restructuring all positively impacted the comparison versus the prior year. Compensation costs increased due to the normalization of variable compensation payments in 2017, partially offset by lower non-compensation expenses. The year-on-year development of noninterest expenses also benefitted from foreign exchange rate movements.

Private & Commercial Bank

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
				in € m.	in %	in € m.	in %
Net revenues:							
Private and Commercial Business (Germany)	6,802	6,583	6,873	220	3	(290)	(4)
Private and Commercial Business (International) ¹	1,439	1,455	1,466	(16)	(1)	(11)	(1)
Wealth Management (Global)	1,746	2,021	1,720	(274)	(14)	301	18
Exited businesses ²	170	119	1,031	51	42	(912)	(88)
Total net revenues	10,158	10,178	11,090	(20)	(0)	(912)	(8)
Of which:							
Net interest income	6,077	5,875	6,201	202	3	(326)	(5)
Commissions and fee income	3,143	3,367	3,395	(224)	(7)	(28)	(1)
Remaining income	937	935	1,494	2	0	(558)	(37)
Provision for credit losses	406	313	439	93	30	(126)	(29)
Noninterest expenses:							
Compensation and benefits	4,001	4,027	4,075	(26)	(1)	(47)	(1)
General and administrative expenses	4,867	5,012	4,888	(145)	(3)	124	3
Impairment of goodwill and other intangible assets	0	12	0	(12)	N/M	12	N/M
Restructuring activities	55	360	142	(305)	(85)	218	154
Total noninterest expenses	8,923	9,411	9,104	(488)	(5)	307	3

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Noncontrolling interests	(0)	(12)	0	12	(100)	(12)	N/M
Income (loss) before income taxes	829	465	1,547	363	78	(1,081)	(70)
Cost/income ratio	88 %	92 %	82 %	N/M	(5) ppt	N/M	10 ppt
Assets ³	343,704	333,069	329,869	10,635	3	3,200	1
Risk-weighted assets ⁴	87,709	87,472	86,082	237	0	1,390	2
Average shareholders' equity ⁵	14,514	14,943	14,371	(429)	(3)	572	4
Post-tax return on average tangible shareholders' equity	5 %	2 %	8 %	N/M	2 ppt	N/M	(6) ppt
Post-tax return on average shareholders' equity	4 %	2 %	7 %	N/M	2 ppt	N/M	(5) ppt

N/M – Not meaningful

¹Covers operations in Belgium, India, Italy and Spain.

² Covers operations in Poland and Portugal as well as Private Client Services (PCS) and Hua Xia in historical periods.

³ Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.

⁴Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.

⁵ See Note 4 “Business Segments and Related Information” to the consolidated financial statements for a description of how average shareholders' equity is allocated to the divisions.

Additional information

in € bn. (unless stated otherwise)	2018	2017	2016	2018 increase		2017 increase	
				in € bn.	in %	in € bn.	in %
Assets under management ¹	474	506	501	(32)	(6)	5	1
Net flows	(2)	4	(42)	(6)	N/M	47	N/M

N/M – Not meaningful

¹ We define assets under management as (a) assets we hold on behalf of customers for investment purposes and/or (b) client assets that are managed by us. We manage assets under management on a discretionary or advisory basis, or these assets are deposited with us. Deposits are considered assets under management if they serve investment purposes. In our Private and Commercial Business (Germany) and Private and Commercial Business (International), this includes all time deposits and savings deposits. In Wealth Management, we assume that all customer deposits are held with us primarily for investment purposes.

2018

In 2018, PCB successfully completed the legal merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank, the partial sale of the retail business in Poland, the integration of Sal. Oppenheim and further optimized its branch network. PCB generated income before income taxes of € 829 million in 2018, an increase of € 363 million, or 78 %, compared to the prior year, which was achieved while sustaining continued investment in our strategic

initiatives and despite the ongoing headwind from low interest rate environment. The increase was primarily driven by a decline in noninterest expenses, partly offset by higher provision for credit losses, reflecting a provision release in the prior year as well as loan growth in 2018.

PCB net revenues of € 10.2 billion remained essentially flat compared to the prior year period.

In the Private and Commercial Business (Germany) net revenues increased by € 220 million, or 3 %, compared to the prior year period. Net interest income increased slightly compared to 2017, driven by growth in loan revenues, positive valuation effects from home savings liabilities and a positive year-on-year impact from mortgage loans previously measured at fair value and measured at amortized cost basis since the adoption of the reporting standard IFRS 9. These effects more than offset the impact of the low interest rate environment on deposit margins. Deposit revenues also included a positive impact from the growth in volumes. Remaining income increased significantly mainly reflecting higher asset sales including a € 156 million gain from a property sale, partly offset by lower income from interest-rate-risk hedges. The prior year period included a negative impact of € 118 million from the termination of a legacy Trust Preferred Security, which largely offset the positive impact of € 108 million from the sale of shares in Concardis GmbH. Commission and fee income slightly decreased year-on-year. Lower revenues from postal services subsequent to a contract alignment as well as lower revenues from investment products, in part impacted by MiFID II implementation were partly offset by higher fee income from current accounts reflecting repricing actions.

In the Private and Commercial Business (International), net revenues decreased by € 16 million, or 1 %, compared to the prior year period. The decrease was mainly driven by positive effects related to an asset sale transaction in 2017, reported in Remaining income. Net interest income remained essentially flat compared to the prior year period, with negative impacts from the ongoing low interest rate environment on deposit revenues offset by higher loan revenues. Commission and fee income was essentially flat compared to the previous year as growth in commercial product revenues offset the decline in investment product revenues due to the challenging market environment.

Net revenues in Wealth Management (Global) declined by € 274 million, or 14 %, driven by a € 197 million lower impact from workout activities related to legacy positions in the Sal. Oppenheim franchise. Net revenues were also impacted by unfavorable foreign exchange rate movements. Excluding these effects, net revenues were essentially flat compared to the prior year period. Revenue growth in Asia-Pacific was offset by lower client revenues in EMEA and Germany partly impacted by MiFID II implementation and strategic business decisions as well as volatile capital markets and lower client activity.

In the exited businesses, net revenues increased by € 51 million, or 42 %, compared to the prior year period. The increase was driven by a lower negative impact from sales transactions in Poland and Portugal (2017 was impacted by € 157 million related to the agreement of the partial sale of the retail business in Poland compared to a € 57 million negative effect from the transactions in Portugal and Poland in 2018). This was partly offset by a lower client revenue contribution in Poland due to its sale in November 2018 and the non-recurrence of a positive impact of € 20 million related to the disposal of the PCS unit.

Provision for credit losses of € 406 million increased by € 93 million, or 30 %, compared to the prior year period. This increase reflected higher releases in the previous year period mainly related to a single provision in Postbank as well as loan growth. Both periods included positive impacts from portfolio sales.

Noninterest expenses of € 8.9 billion decreased by € 488 million, or 5 %, compared to 2017. The decline included € 305 million lower restructuring charges related to strategy execution including the reorganization and integration measures in Germany as well as lower litigation costs. In addition, the decline in noninterest expenses is attributable to savings reflecting strict cost discipline as well as executed reorganization measures. These positive impacts were partly offset by incremental investment spending of approximately € 220 million related to the merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank, investments in our businesses in Italy and Spain as well as costs related to the agreements to sell businesses in Portugal and Poland.

PCB's Assets under Management of € 474 billion decreased by € 32 billion compared to December 31, 2017. The decline was mainly attributable to € 30 billion market depreciation, a deconsolidation effect of € 4 billion subsequent to the disposal of the business in Poland and € 2 billion net outflows partly compensated by € 4 billion foreign exchange rate movements. Net inflows in the Private and Commercial Business (Germany) primarily in deposits were offset by net outflows in Wealth Management. In Wealth Management, net inflows in Germany and Asia Pacific region were more than offset by net outflows in EMEA and Americas.

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2017

PCB's results in 2017 were significantly impacted by strategy-related items, which included restructuring provisions related to the merger of Deutsche Bank Privat- und Geschäftskunden AG and Postbank as well as a negative revenue impact subsequent to the agreement related to the partial sale of the retail business in Poland. In contrast, results in 2016 benefited from a gain related to the sale of the stake in Hua Xia Bank Co. Ltd. These specific factors as well as the challenging interest environment explain most of the year-on-year decline of € 1.1 billion in PCB's income before income taxes of € 465 million.

Total net revenues of € 10.2 billion decreased by € 912 million, or 8 %, compared to 2016.

In the Private and Commercial Business (Germany) net revenues declined by € 290 million, or 4 %, compared to the prior year. Remaining income was significantly lower as in 2016, which benefited from gains on certain asset sales including € 129 million related to the sale of shares in VISA Europe Limited. In 2017 Remaining income included a negative impact of € 118 million from the termination of a legacy trust preferred security, which was largely compensated by a gain of € 108 million from the sale of shares in Concardis GmbH. Net interest income declined slightly year-on-year as the ongoing impact of the low interest rate environment on deposit revenues was partly mitigated by higher loan revenues reflecting growth in lending volumes. Commission and fee income increased slightly reflecting higher fee income from current accounts subsequent to the introduction of a new pricing model for current accounts (in Postbank) and higher revenues from investment products.

Revenues in the Private and Commercial Business (International) declined year-on-year by € 11 million, or 1 %. Remaining income decreased compared to 2016, which also included € 73 million gains related to the sale of shares in VISA Europe Limited, while revenues in 2017 included a smaller positive impact from an asset sale transaction. Net interest income was essentially flat as the impact of the low interest rate environment on deposit revenues was partly offset by higher loan revenues. Commission and fee income increased slightly principally reflecting higher fees from cards and current accounts as well as improved revenues from investment products.

Revenues in the Wealth Management (Global) businesses increased by € 301 million, or 18 %, mainly driven by positive impacts of approximately € 400 million from workout activities in the Sal. Oppenheim franchise. Workout gains were primarily driven by favorable legal outcomes which positively impacted the valuation of loans, whose carrying values were reduced as part of the acquisition. Excluding these effects, net revenues decreased compared to 2016 reflecting foreign exchange rate movements as well as a decline in net interest revenues driven by loan book reductions mainly in the Americas. Commission and fee income was slightly below 2016, reflecting lower client activities and a lower asset base in the Americas and EMEA partly compensated by good growth in Asia Pacific.

In the exited businesses, net revenues declined by € 912 million, or 88 % year-on-year. 2016 included a € 618 million revenue contribution from Hua Xia Bank Co. Ltd. as well as a € 140 million higher revenue contribution from the Private Client Services (PCS) unit in the U.S. prior to its sale. Net revenues in 2017 were also negatively impacted by € 157 million related to the agreement of the partial sale of the retail business in Poland.

Provision for credit losses of € 313 million decreased by € 126 million, or 29 %, year-on-year benefiting from a provision release in Postbank as well as a good portfolio quality in a continued benign economic environment. Both periods included positive impacts from selective portfolio sales.

Noninterest expenses of € 9.4 billion increased by € 307 million, or 3 %, compared to 2016. Noninterest expenses in 2017 included net restructuring charges of € 360 million (€ 142 million in 2016) related to strategic items including the reorganization and integration measures in Germany. Noninterest expenses also increased due to higher variable compensation and higher investment spending. These effects were partially offset by savings from executed reorganization measures and a reduced cost base after the disposal of the PCS unit.

PCB's Assets under Management of € 506 billion increased by € 5 billion compared to December 31, 2016. Negative impacts from foreign exchange rate movements were more than offset by market appreciation and by net inflows of € 4 billion primarily in the Private and Commercial Business (Germany). Net inflows were mainly in deposit products, in part reflecting the successful win-back of mandates. In Wealth Management net inflows were partly impacted by strategic business decisions and continued de-risking.

Asset Management

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
				in € m.	in %	in € m.	in %
Net revenues							
Management Fees	2,115	2,247	2,190	(132)	(6)	57	3
Performance and transaction fees	91	199	220	(109)	(55)	(21)	(9)
Other revenues	(20)	86	209	(106)	N/M	(123)	(59)
Mark-to-market movements on policyholder positions in Abbey Life	0	0	396	0	N/M	(396)	N/M
Total net revenues	2,186	2,532	3,015	(346)	(14)	(483)	(16)
Provision for credit losses	(1)	(1)	1	(0)	67	(1)	N/M
Noninterest expenses							
Compensation and benefits	787	812	737	(25)	(3)	75	10
General and administrative expenses	929	978	1,026	(49)	(5)	(48)	(5)
Policyholder benefits and claims	0	0	374	(0)	N/M	(374)	(100)
Impairment of goodwill and other intangible assets	0	3	1,021	(3)	N/M	(1,018)	(100)
Restructuring activities	19	6	47	13	N/M	(41)	(88)
Total noninterest expenses	1,735	1,799	3,205	(64)	(4)	(1,405)	(44)
Noncontrolling interests	85	1	0	83	N/M	1	N/M
Income (loss) before income taxes	367	732	(190)	(364)	(50)	922	N/M
Cost/income ratio	79 %	71 %	106 %	N/M	8 ppt	N/M	(35) ppt
Assets ¹	10,030	8,050	12,300	1,980	25	(4,250)	(35)
Risk-weighted assets ²	10,365	8,432	8,960	1,932	23	(528)	(6)
Average shareholders' equity ³	4,669	4,687	4,460	(19)	(0)	227	5

Post-tax return on average tangible shareholders' equity	18 %	56 %	71 %	N/M	(38) ppt	N/M	(15) ppt
Post-tax return on average shareholders' equity	6 %	10 %	(3) %	N/M	(5) ppt	N/M	13 ppt

N/M – Not meaningful

1Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.

2Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.

3See Note 4 “Business Segments and Related Information” to the consolidated financial statements for a description of how average shareholders' equity is allocated to the divisions.

2018

In Asset Management, the initial public offering of DWS was successfully completed during the first quarter of 2018. Market conditions were challenging in 2018 with US tax reform and lower demand for European retail funds posing challenges to AM and the asset management industry. AM is adapting to the market conditions by further accelerating cost reductions. In line with its communicated target, AM maintained a management fee margin of 30 basis points and above in 2018. In 2018 AM reported significantly lower income before income taxes of € 367 million, a € 364 million or 50 % decline compared to 2017. The decline was principally driven by lower revenues which were negatively impacted by unfavorable net flows and lower performance fees. Higher non-controlling interest attributable to minority shareholders for nine months following the initial public offering of DWS, which did not arise in the prior year, were partially offset by lower noninterest expenses.

Net revenues were € 2.2 billion, a decrease of € 346 million or 14 %.

Management fees were € 132 million, or 6 % lower, driven by net outflows of Assets under Management and fee margin compression in active managed products, lower Assets under Management driven fees in Alternatives and the absence of revenues from sold and discontinued businesses. The decline was partly compensated by the strong performance of Passive business from higher Assets under Management.

Performance and transaction fees were significantly lower by € 109 million or 55 %, due to the absence of fees for a specific Alternatives fund received in 2017 and lower performance fees from Active products.

Other revenues were significantly lower by € 106 million compared to the prior year. The decline was primarily due to the impact of sold and discontinued businesses in both 2017 and 2018 and the absence of a non-recurring recovery relating to a real-estate fund legal matter recorded in 2017.

Noninterest expenses of € 1.7 billion were € 64 million, or 4 % lower. Compensation and benefits were essentially flat with lower variable compensation costs offset by higher severance payments. General and administrative expenses were slightly lower driven by a significant decline in cost of services provided by Deutsche Bank Group to DWS, partially offset by litigation expenses relating to a sold legacy business, higher MiFID II driven external research costs and higher costs for DWS operating as a stand-alone company.

Assets under Management were € 664 billion, a decrease of € 37 billion, or 5 %, versus December 31, 2017. The decrease was driven by € 28 billion unfavorable market development and € 23 billion net outflows, partly offset by

€ 13 billion positive foreign exchange effects. The outflows were primarily driven by outsourced insurance assets and the impact of US companies repatriating assets following US tax reforms. The development in Assets under Management was also impacted by volatile markets and weaker investor sentiment together with underperformance in some flagship funds. Passive had strong inflows particularly in European Exchange Traded Products and mandates.

The following table provides the development of Assets under Management during 2018, broken down by product type as well as the respective management fee margins:

in € bn.	Active Equity	Active Fixed Income	Active Multi Asset	Active SQI	Active Cash	Passive	Alternatives	Assets under Management
Balance as of December 31, 2017	95	238	57	65	59	115	73	702
Inflows	14	58	10	16	490	56	10	655
Outflows	(21)	(75)	(14)	(17)	(493)	(48)	(9)	(678)
Net Flows	(7)	(17)	(3)	(0)	(3)	8	1	(23)
FX impact	1	6	0	0	1	3	1	13
Performance	(10)	(2)	(3)	(3)	0	(11)	0	(28)
Other	0	1	0	(0)	(0)	(0)	1	1
Balance as of December 31, 2018	78	226	51	61	58	115	76	664
Management fee margin (in bps)	76	14	39	26	7	25	53	31

1Inflows and Outflows as reported include the AuM shifts between asset classes.

2017

In 2017, AM reported significantly higher income before income taxes of € 732 million, a € 922 million increase compared to 2016, driven by the absence of the impairment of goodwill and other intangible assets related to Abbey Life recorded in 2016. Excluding Abbey Life, which was disposed in the fourth quarter of 2016, AM income before income taxes in 2017 was broadly flat compared to 2016, as higher revenues were offset by higher noninterest expenses and several non-recurring items.

Net revenues were € 2.5 billion, a decrease of € 483 million or 16 %. Excluding Abbey Life in 2016, net revenues increased by € 54 million, or 2 %, compared to the prior year.

Management fees increased slightly by € 57 million, or 3 %, mainly in Active driven by favorable market movements.

Performance and transaction fees were € 21 million or 9 % lower, primarily driven by lower fund performance fees from one of the Active funds compared to the prior year.

Other revenues were significantly lower by € 123 million or 59 % compared to the prior year. The decline was primarily due to non-recurring revenues from Abbey Life excluding mark-to-market revenues and proceeds on sale of Asset Management India as well as a write-up relating to HETA exposure which was exited in 2016 - these impacts were partly offset by a recovery relating to a real-estate fund legal matter in the current year and the loss on sale of the Luxembourg-based Sal. Oppenheim asset servicing business and negative fair value related to guaranteed products in

prior year. Following the sale of Abbey Life in 2016, no mark-to-market movements on policyholder positions were recorded in 2017, compared to € 396 million reported in the prior year.

Noninterest expenses of € 1.8 billion decreased significantly by € 1.4 billion, or 44 %, due to the non-recurrence of costs relating to Abbey Life and lower restructuring expenses. Compensation and benefits were higher due to increased variable compensation costs. General and administrative expenses were slightly lower compared to prior year, driven by the non-recurrence of costs relating to Abbey Life, partly offset by an operational loss provision taken in 2015 and released in 2016, coupled with 2017 costs relating to the DWS IPO.

Assets under Management were € 702 billion, a decrease of € 4 billion versus December 31, 2016, driven by € 36 billion unfavorable foreign exchange rate movements and € 13 billion divestments mainly relating to disposals of the Luxembourg-based Sal. Oppenheim asset servicing business and U.S. Private Clients business, partly offset by € 30 billion favorable market performance and € 16 billion net inflows led by European Exchange Traded Funds, multi asset and liquidity product net inflows, partly offset by insurance asset net outflows.

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The following table provides the development of Assets under Management during 2017, broken down by product type as well as the respective management fee margins:

in € bn.	Active Equity	Active Fixed Income	Active Multi Asset	Active SQI	Active Cash	Passive	Alternatives	Assets under Management
Balance as of December 31, 2016	91	255	51	66	63	98	82	706
Inflows	19	70	21	16	410	36	16	589
Outflows	(21)	(72)	(10)	(20)	(409)	(25)	(15)	(573)
Net Flows	(2)	(2)	11	(4)	1	11	0	16
FX impact	(3)	(17)	(1)	(0)	(3)	(7)	(5)	(36)
Performance	9	5	1	2	(1)	11	3	30
Other	(1)	(3)	(6)	2	0	1	(6)	(13)
Balance as of December 31, 2017	95	238	57	65	59	115	73	702
Management fee margin (in bps)	76	14	42	24	9	24	58	32

1 Inflows and Outflows as reported include the AuM shifts between asset classes.

Non-Core Operations Unit

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
				in € m.	in %	in € m.	in %
Non-Core Operations Unit							

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Net revenues	–	–	(382)	0	N/M	382	N/M
thereof:							
Net interest income and net gains (losses) on financial assets/liabilities at fair value through profit or loss	–	–	(1,307)	0	N/M	1,307	N/M
Provision for credit losses	–	–	128	0	N/M	(128)	N/M
Noninterest expenses							
Compensation and benefits	–	–	68	0	N/M	(68)	N/M
General and administrative expenses	–	–	2,659	0	N/M	(2,659)	N/M
Policyholder benefits and claims	–	–	0	0	N/M	0	N/M
Impairment of goodwill and other intangible assets	–	–	(49)	0	N/M	49	N/M
Restructuring activities	–	–	4	0	N/M	(4)	N/M
Total noninterest expenses	–	–	2,682	0	N/M	(2,682)	N/M
Noncontrolling interests	–	–	(4)	0	N/M	4	N/M
Income (loss) before income taxes	–	–	(3,187)	0	N/M	3,187	N/M
Assets ¹	–	–	5,523	0	N/M	(5,523)	N/M
Risk-weighted assets ²	–	–	9,174	0	N/M	(9,174)	N/M
Average shareholders' equity ³	–	–	690	0	N/M	(690)	N/M

N/M – Not meaningful

¹Segment assets represent consolidated view, i.e., the amounts do not include intersegment balances.

²Risk-weighted assets and capital ratios are based upon CRR/CRD 4 fully loaded.

³See Note 4 “Business Segments and Related Information” to the consolidated financial statements for a description of how average shareholders’ equity is allocated to the divisions.

From 2017 onwards, Non-Core Operations Unit (NCOU) ceased to exist as a standalone division. The remaining legacy assets as of December 31, 2016 are now managed by the corresponding operating segments, predominately Corporate & Investment Bank and Private & Commercial Bank.

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Corporate & Other (C&O)

in € m. (unless stated otherwise)	2018	2017	2016	2018 increase (decrease) from 2017		2017 increase (decrease) from 2016	
				in € m.	in %	in € m.	in %
Net revenues	(73)	(489)	(473)	416	(85)	(17)	4
Provision for credit losses	0	(0)	(0)	1	N/M	0	(19)
Noninterest expenses							

Corporate & Other (C&O)

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Compensation and benefits	3,055	3,050	2,931	5	0	119	4
General and administrative expenses	(2,624)	(2,458)	(2,398)	(166)	7	(59)	2
Policyholder benefits and claims	0	0	0	0	N/M	0	N/M
Impairment of goodwill and other intangible assets	0	0	(0)	0	N/M	0	N/M
Restructuring activities	0	0	(7)	(0)	(85)	7	N/M
Total noninterest expenses	431	593	525	(161)	(27)	67	13
Noncontrolling interests	(109)	(16)	(46)	(93)	N/M	30	(65)
Income (loss) before income taxes	(396)	(1,066)	(952)	670	(63)	(114)	12
Assets ¹	5,872	6,586	40,959	(714)	(11)	(34,373)	(84)
Risk-weighted assets ²	16,053	16,734	15,706	(681)	(4)	1,028	7
Average shareholders' equity	0	99	2,249	(99)	N/M	(2,150)	(96)

N/M – Not meaningful

¹ Assets in C&O reflect residual Treasury assets not allocated to the business segments as well as Corporate assets, such as deferred tax assets and central clearing accounts, outside the management responsibility of the business segments.

² Risk weighted assets are based upon CRR/CRD 4 fully loaded. Risk-weighted assets in C&O reflect Treasury and Corporate assets outside the management responsibility of the business segments, primarily the Group's deferred tax assets.

2018

C&O reported a loss before income taxes of € 396 million in 2018, an improvement of € 670 million, or 63 %, mainly driven by the realization of a negative currency translation adjustment in 2017, lower noninterest expenses as well as higher reversals of noncontrolling interests in 2018 primarily resulting from the initial public offering of DWS Group GmbH & Co. KGaA ("DWS").

Net revenues were negative € 73 million in 2018, compared to negative € 489 million in 2017. Net revenues in 2017 were impacted by the realization of a currency translation adjustment of negative € 164 million associated with the disposal of a non-strategic subsidiary in Argentina. Revenues related to maintaining funding and liquidity buffers in excess of business-based liquidity requirements amounted to negative € 73 million in 2018, compared to negative € 93 million in the prior year. Valuation and timing differences contributed revenues of € 107 million in 2018, compared to € 51 million in 2017.

Noninterest expenses were € 431 million in 2018, a decrease of € 161 million, or 27 %, compared to prior year, driven by lower-than-planned Infrastructure expenses in 2018. From 2018 onwards, Infrastructure expenses are allocated to the corporate divisions based on the planned allocations. Any difference between planned and actual allocations is captured within C&O. This was partly offset by expenses associated with shareholder activities as defined in the OECD Transfer Pricing Guidelines not allocated to the business divisions of € 422 million in 2018, compared to € 371 million in the prior year.

Noncontrolling interests are deducted from income before income taxes of the divisions and reversed in C&O. The increase from € 16 million in 2017 to € 109 million in 2018 was primarily a result of the aforementioned IPO of DWS.

2017

C&O reported a loss before income taxes of € 1.1 billion in 2017, compared to a loss of € 952 million in 2016, an increase of € 114 million, or 12 %, primarily driven by the realization of a negative currency translation adjustment and higher litigation costs in 2017, partly compensated by a positive valuation and timing impact.

Net revenues were negative € 489 million in 2017, compared to negative € 473 million in the prior year, a decline of € 17 million or 4 %. Net revenues in 2017 were impacted by the realization of a currency translation adjustment of negative € 164 million associated with the disposal of a non-strategic subsidiary in Argentina. Revenues related to maintaining funding and liquidity buffers in excess of business-based liquidity requirements were negative € 93 million in 2017, compared to negative € 12 million in 2016. Foreign exchange revaluation of proceeds from GBP denominated AT1 issuance was negative € 26 million in 2017, compared to negative € 127 million in the prior year. Valuation and timing differences contributed revenues of € 51 million in 2017, compared to negative € 148 million in 2016.

Noninterest expenses were € 593 million in 2017, an increase of € 67 million, or 13 %, compared to prior year. Litigation costs of € 112 million in 2017 increased by of € 130 million, compared to prior year. 2016 litigation costs benefitted from a € 73 million insurance recovery. This was partly offset by expenses associated with shareholder activities as defined in the OECD Transfer Pricing Guidelines not allocated to the business divisions of € 371 million in 2017, compared to € 411 million in 2016.

Noncontrolling interests are deducted from income before income taxes of the divisions and reversed in C&O. The decrease from € 46 million in 2016 to € 16 million in 2017 primarily related to CIB and PCB.

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Financial Position

Assets

in € m.	Dec 31, 2018	Dec 31, 2017	2018 increase (decrease) from 2017	
			in € m.	in %
Cash and central bank balances	188,731	225,655	(36,924)	(16)
Interbank balances (w/o central banks)	8,881	9,265	(384)	(4)
Central bank funds sold and securities purchased under resale agreements	8,222	9,971	(1,749)	(18)
Securities borrowed	3,396	16,732	(13,336)	(80)
Financial assets at fair value through profit or loss				
Trading assets	152,738	184,661	(31,924)	(17)
Positive market values from derivative financial instruments	320,058	361,032	(40,974)	(11)
Non-trading financial assets mandatory at fair value through profit and loss	100,444	N/M	100,444	N/M
Financial assets designated at fair value through profit or loss	104	91,276	(91,172)	(100)
Total financial assets at fair value through profit or loss	573,344	636,970	(63,626)	(10)
Financial assets at fair value through other comprehensive income	51,182	N/M	51,182	N/M

2017

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Financial assets available for sale	N/M	49,397	(49,397)	N/M
Equity method investments	879	866	13	1
Loans at amortized cost	400,297	401,699	(1,403)	(0)
Securities held to maturity	N/M	3,170	(3,170)	N/M
Property and equipment	2,421	2,663	(241)	(9)
Goodwill and other intangible assets	9,141	8,839	302	3
Other assets	93,444	101,491	(8,047)	(8)
Of which: Brokerage and securities related receivables	66,675	83,015	(16,340)	(20)
Assets for current tax / Deferred tax assets	8,200	8,014	186	2
Total assets	1,348,137	1,474,732	(126,595)	(9)
Of which: Total central bank funds sold, securities purchased under resale agreements and securities loaned across all applicable measurement categories	81,467	104,800	(23,333)	(22)
at amortized cost	11,618	26,703	(15,085)	(56)
mandatory at fair value through profit and loss	68,752	N/M	68,752	N/M
designated at fair value through profit and loss	0	78,097	(78,097)	N/M
at fair value through other comprehensive income	1,097	N/M	1,097	N/M
Of which: Total loans across all applicable measurement categories	429,591	420,063	9,528	2
at amortized cost	400,297	401,699	(1,403)	(0)
at fair value through profit and loss (trading)	11,462	10,876	586	5
mandatory at fair value through profit and loss	12,741	N/M	12,741	N/M
designated at fair value through profit and loss	0	4,802	(4,802)	N/M
at fair value through other comprehensive income	5,092	N/M	5,092	N/M
available for sale at fair value	N/M	2,685	(2,685)	N/M

Liabilities and Equity

			2018 increase (decrease) from 2017	
in € m.	Dec 31, 2018	Dec 31, 2017	in € m.	in %
Deposits	564,405	581,873	(17,468)	(3)
Central bank funds purchased and securities sold under repurchase agreements	4,867	18,105	(13,239)	(73)
Securities loaned	3,359	6,688	(3,330)	(50)
Financial liabilities at fair value through profit or loss	415,680	478,636	(62,957)	(13)
Trading liabilities	59,924	71,462	(11,539)	(16)
Negative market values from derivative financial instruments	301,487	342,726	(41,239)	(12)
Financial liabilities designated at fair value through profit or loss	53,757	63,874	(10,117)	(16)
Investment contract liabilities	512	574	(62)	(11)
Other short-term borrowings	14,158	18,411	(4,253)	(23)
Other liabilities	117,513	132,208	(14,695)	(11)

Of which: Brokerage and securities related payables	90,708	106,742	(16,035)	(15)
Provisions	2,711	4,158	(1,447)	(35)
Liabilities for current tax / Deferred tax liabilities	1,456	1,346	110	8
Long-term debt	152,083	159,715	(7,632)	(5)
Trust preferred securities	3,168	5,491	(2,323)	(42)
Obligation to purchase common shares	0	0	0	N/M
Total liabilities	1,279,400	1,406,633	(127,234)	(9)
Of which: Total central bank funds purchased, securities sold under resale agreements and securities loaned across all applicable measurement categories				
at amortized cost	8,226	24,794	(16,568)	(67)
designated at fair value through profit and loss	46,304	54,880	(8,576)	(16)
Total equity	68,737	68,099	639	1

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Movements in Assets

As of December 31, 2018, total assets decreased by € 126.6 billion (or 9 %) compared to year-end 2017.

Positive market value from derivative financial instruments decreased by € 41.0 billion, mainly attributable to interest rate products driven by increased swap rates which are inversely correlated with mark-to-market values as well as foreign exchange rate products as a result of fluctuating foreign exchange rates. Reduced trading volumes also contributed to the decrease. This decrease went along with a corresponding decrease in negative market values from derivative financial instruments.

Cash and central bank balances decreased by € 36.9 billion, primarily driven by reductions in deposits and short-term borrowings as well as initiatives to utilize excess cash to fund securities positions.

Trading assets decreased by € 31.9 billion, mainly driven by strategic reshaping in CIB along with de-risking activities as well as reduced client positions in the Equities business. The weakening of global indices also contributed to the decrease.

Central bank funds sold, securities purchased under resale agreements and securities borrowed, across all applicable balance sheet categories, decreased by € 23.3 billion, primarily driven by managed reductions as a result of our balance sheet optimization initiatives, lower short coverage requirements and increased netting.

Brokerage and securities related receivables decreased by € 16.3 billion, primarily due to the majority of receivables from Prime Brokerage being moved to non-trading financial assets mandatory at fair value through profit and loss under IFRS 9. Cash/margin receivables also decreased, reflecting the reduction in negative market values from derivative financial instruments.

These decreases were partly offset by a € 8.3 billion increase in other assets excluding brokerage and securities related receivables, mainly driven by reclassifications of exposures to debt securities hold-to-collect following the implementation of IFRS 9 and reclassifications to assets held for sale subsequent to the agreement to sell our retail operations in Portugal.

Loan classifications have been significantly impacted by the adoption of IFRS 9. Loans previously classified at amortized cost under IAS 39 are now reported in several different categories, not only in loans at amortized cost, but also in non-trading financial assets mandatory at fair value through profit and loss and financial assets designated at fair value through other comprehensive income. Across all of these categories, the actual business movement for net loans was an increase of € 9.5 billion, or € 16.6 billion excluding the impact of exited business in PCB, mainly driven by new deals and increased drawdowns from the existing facilities during the period.

The overall movement of the balance sheet included an increase of € 24.0 billion due to foreign exchange rate movements, mainly driven by strengthening of the U.S. Dollar versus the Euro. The effects from foreign exchange rate movements are embedded in the movement of the balance sheet line items discussed in this section.

Movements in Liabilities

As of December 31, 2018, total liabilities decreased by € 127.2 billion (or 9 %) compared to year-end 2017.

Negative market values from derivative financial instruments decreased by € 41.2 billion, primarily due to the same factors as the movements in positive market values from derivative financial instruments discussed above.

Central bank funds purchased, securities sold under repurchase agreements and securities loaned, across all applicable balance sheet categories, decreased by € 25.1 billion, primarily driven by managed reductions as a result of our balance sheet optimization initiatives and increased netting.

Deposits decreased by € 17.5 billion, primarily driven by management actions to lower volumes with financial institutions as well as matured trades during the period. Maturing Certificates of Deposits held by other wholesale customers also contributed to the decrease. This decrease was partly offset by an increase in our retail business.

Brokerage and securities related payables decreased by € 16.0 billion, primarily due to strategic actions to reduce Prime Brokerage payables as part of our balance sheet optimization initiatives and lower cash/margin payables being in line with the observed reduction in positive market values from derivative financial instruments.

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Trading liabilities decreased by € 11.5 billion, mainly driven by managed reductions in short positions to reduce short coverage requirements supporting our deleveraging activities along with our strategic reshaping in CIB.

Long term debt decreased by € 7.6 billion, primarily driven by matured deals including Targeted Longer-Term Refinancing Operations II (TLTRO II) during the period and managed reductions as a result of our balance sheet optimization initiatives.

Similar to total assets, the impact of foreign exchange rate movements during the period is embedded in the overall movements in liabilities as discussed in this section.

Liquidity

Liquidity reserves amounted to € 259 billion as of December 31, 2018 (compared to € 280 billion as of December 31, 2017). We maintained a positive liquidity stress result as of December 31, 2018 (under the combined scenario).

Equity

Total equity as of December 31, 2018, increased by € 1.3 billion compared to pro-forma total equity after the adoption of IFRS 9 as of January 1, 2018, which considers a one-time transition effect of € (671) million to the Total shareholders' equity of € 63.2 billion as of December 31, 2017 (please refer to chapter "IFRS 9 Transition Impact Analysis" in this report).

The increase of € 1.3 billion was mainly driven by an increase of non-controlling interests of € 1.3 billion as a result of the IPO and partial sale of Deutsche Bank's subsidiary DWS Group GmbH & Co. KGaA, the net income attributable to Deutsche Bank shareholders and additional equity components of € 267 million as well as net gains from exchange rate changes of € 500 million, relating especially to the US dollar. These factors were partly offset by a reduction in unrealized gains on financial assets at fair value through other comprehensive income of € 428 million, mainly due to asset sales, coupons paid on additional equity components of € 292 million net of tax as well as cash dividends paid to Deutsche Bank shareholders of € 227 million.

Regulatory Capital

With effect from January 1, 2018, the CRR/CRD 4 "transitional" (or "phase-in") rules under which Common Equity Tier 1 (CET 1) regulatory adjustments were phased in have reached a rate of 100 %, together with the 100 % phase-out rate of minority interest only recognizable under the transitional rules. For Risk-weighted assets (RWA) the grandfathering of equity investments at a risk-weight of 100 % expired by the end of 2017. Instead a risk weight between 190 % and 370 % determined based on Article 155 CRR under the CRR/CRD 4 is applied. Hence, starting 2018 onwards, the CET 1 capital and RWA figures show no difference between CRR/CRD 4 and fully loaded CRR/CRD 4.

Our CET 1 capital according to CRR/CRD 4 as of December 31, 2018 (fully loaded rules applicable) decreased by € 3.3 billion to € 47.5 billion, compared to € 50.8 billion as of December 31, 2017 (based on transitional arrangements). RWA according to CRR/CRD 4 increased by € 7.1 billion to € 350.4 billion as of December 31, 2018, compared to € 343.3 billion as of December 31, 2017. Due to the decrease in CRR/CRD 4 CET 1 capital and increase in RWA, the CRR/CRD 4 CET 1 capital ratio as of December 31, 2018 decreased to 13.6 % compared to 14.8 % as of December 31, 2017.

Our fully loaded CRR/CRD 4 CET 1 capital as of December 31, 2018 (now equal to CRR/CRD 4 CET 1 capital) amounted to € 47.5 billion, € 0.8 billion lower compared to € 48.3 billion as of December 31, 2017. RWA according to CRR/CRD 4 fully loaded increased by € 6.2 billion to € 350.4 billion as of December 31, 2018 compared to € 344.2 billion as of December 31, 2017. This resulted in the fully loaded CRR/CRD 4 CET 1 capital ratio as of December 31, 2018 decreasing to 13.6 % compared to 14.0 % as of December 31, 2017.

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Liquidity and Capital Resources

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Tabular Disclosure of Contractual Obligations

Cash payment requirements outstanding as of December 31, 2018.

Contractual obligations in € m.	Total	Less than 1 year	Payment due by period		
			1–3 years	3–5 years	More than 5 years
Long-term debt obligations ¹	165,756	50,193	51,079	25,886	38,598
Trust preferred securities ^{1,2}	3,342	3,342	0	0	0
Long-term financial liabilities designated at fair value through profit or loss ³	5,856	1,332	572	880	3,073
Finance lease obligations	118	19	24	10	65
Operating lease obligations	6,264	707	1,139	938	3,480
Purchase obligations	2,015	239	728	255	793
Long-term deposits ¹	33,727	0	15,656	6,028	12,043
Other long-term liabilities	1,922	1,111	316	189	306
Total	219,000	56,943	69,515	34,184	58,358

¹Includes interest payments.

²Contractual payment date or first call date.

³ Long-term debt and long-term deposits designated at fair value through profit or loss.

Figures above do not include the future revenues of non-cancellable sublease rentals of € 20 million on operating leases. Purchase obligations for goods and services include future payments for, among other things, information technology services and facility management. Some figures above for purchase obligations represent minimum contractual payments and actual future payments may be higher. Long-term deposits exclude contracts with a remaining maturity of less than one year. Under certain conditions future payments for some long-term financial liabilities designated at fair value through profit or loss may occur earlier. See the following notes to the consolidated financial statements for further information: Note 5 “Net Interest Income and Net Gains (Losses) on Financial Assets/Liabilities at Fair Value through Profit or Loss”, Note 24 “Leases”, Note 28 “Deposits” and Note 32 “Long-Term Debt and Trust Preferred Securities”.

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Introduction

Disclosures in line with IFRS 7 and IAS 1

The following Risk Report provides qualitative and quantitative disclosures about credit, market and other risks in line with the requirements of International Financial Reporting Standard 7 (IFRS 7) Financial Instruments: Disclosures, and capital disclosures required by International Accounting Standard 1 (IAS 1) Presentation of Financial Statements. It also considers the changes following the adoption of IFRS 9 with regards to classification and measurement and impairment and includes the related impacts on key ratios, like regulatory capital and risk-weighted assets (RWA) at Deutsche Bank. Further details specific to IFRS 9 can be found further below in this report, specifically in the Credit Risk Management and Model section, in the Credit Risk Mitigation section, in the Asset Quality section and in Note 1 “Significant accounting policies and critical accounting estimates” as well as Note 2 “Recently adopted and new accounting pronouncements” to the consolidated financial statements. Information which forms part of and is incorporated by reference into the financial statements of this report is marked by a bracket in the margins throughout this Risk Report.

Disclosures according to Pillar 3 of the Basel 3 Capital Framework

Most disclosures according to Pillar 3 of the Basel 3 Capital Framework, which are implemented in the European Union by the Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms (Capital Requirements Regulation or CRR) and supported by EBA Implementing Technical Standards or the “Final Report on the Guidelines on Disclosure Requirements under Part Eight of Regulation (EU) No 575/2013” (“EBA Guideline”, EBA/GL/2016/11, version 2*) are published in our additional Pillar 3 report, which can be found on our website. In cases where disclosures in this Risk Report also support Pillar 3 disclosure requirements these are highlighted by references from the Pillar 3 Report into the Risk Report.

Disclosures according to principles and recommendations of the Enhanced Disclosure Task Force (EDTF)

In 2012 the Enhanced Disclosure Task Force (“EDTF”) was established as a private sector initiative under the auspices of the Financial Stability Board (“FSB”), with the primary objective to develop fundamental principles for enhanced risk disclosures and to recommend improvements to existing risk disclosures. As a member of the EDTF we adhere to the disclosure recommendations in this Risk Report and also in our additional Pillar 3 Report.

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Risk and capital overview

Key risk metrics

The following selected key risk ratios and corresponding metrics form part of our holistic risk management across individual risk types. The Common Equity Tier 1 Ratio (CET 1), Internal Capital Adequacy Ratio (ICA), Leverage Ratio (LR), Minimum Requirement for Own Funds and Eligible Liabilities (MREL), Liquidity Coverage Ratio (LCR), and Stressed Net Liquidity Position (sNLP) serve as high level metrics and are fully integrated across strategic planning, risk appetite framework, stress testing (except LCR and MREL), and recovery and resolution planning practices, which are reviewed and approved by our Management Board at least annually. The CET 1, LR, Leverage Exposure, MREL, LCR and Risk-Weighted-Assets ratios and metrics, which are regulatory defined, are based on the fully loaded rules under the Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms (Capital Requirements Regulation or “CRR”) and the directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms (Capital Requirements Directive 4 or “CRD 4”). MREL is based on the Single Resolution Mechanism (SRM) regulation as well as respective communication by the Single Resolution Board (SRB). ICA, Economic Capital and sNLP are Deutsche Bank specific internal risk metrics in addition to the above described regulatory metrics.

Common Equity Tier 1 Ratio

31.12.2018	13.6 %
31.12.2017	14.0 %

Internal Capital Adequacy Ratio¹

31.12.2018	196 %
31.12.2017	192 %

Leverage Ratio

31.12.2018	4.1 %
31.12.2017	3.8 %

Minimum requirement for own funds and eligible liabilities (MREL)

31.12.2018	11.1 %
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Liquidity Coverage Ratio

31.12.2018	140 %
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31.12.2017	140 %
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Total Risk-Weighted Assets

31.12.2018	€ 350.4 bn
------------	------------

31.12.2017	€ 344.2 bn
------------	------------

Total Economic Capital²

31.12.2018	€ 26.1 bn
------------	-----------

31.12.2017	€ 27.1 bn
------------	-----------

Leverage Exposure

31.12.2018	€ 1,273 bn
------------	------------

31.12.2017	€ 1,395 bn
------------	------------

Stressed Net Liquidity Position (sNLP)

31.12.2018	€ 48.1 bn
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31.12.2017	€ 32.6 bn
------------	-----------

¹ The definition of capital supply for the purpose of calculating the internal capital adequacy ratio has been changed to take a perspective that aims at maintaining the viability of Deutsche Bank on an ongoing basis. More information is provided in section "Internal Capital Adequacy".

²The quantile used to measure the economic capital demand has been changed from 99.98 % to 99.9 % to take a perspective that aims at maintaining the viability of Deutsche Bank on an ongoing basis in alignment with the change of the definition of capital supply. More information is provided in section "Internal Capital Adequacy". An overview of the quantitative impact of the quantile change on the economic capital is provided in section "Risk Profile".

For further details please refer to sections "Risk profile", "Risk appetite and capacity", "Risk and capital plan", "Stress testing", "Recovery and resolution planning", "Risk and capital management", "Capital, leverage ratio and MREL" (for phase-in and fully loaded figures), "Liquidity coverage ratio", and "Stress testing and scenario analysis".

Overall risk assessment

Key risk types include credit risk (including default, migration, transaction, settlement, exposure, country, mitigation and concentration risks), market risk (including interest rate, foreign exchange, equity, credit spread, commodity and cross-asset & other risks), liquidity risk, business risk (including tax and strategic risk), cross risk, reputational risk and operational risk (with important sub-categories like compliance, legal, model, information security, fraud, and money laundering risks). We manage the identification, assessment and mitigation of top and emerging risks through an internal governance process and the use of risk management tools and processes. Our approach to identification and impact assessment aims to ensure that we mitigate the impact of these risks on our financial results, long-term strategic goals and reputation. Please refer to the section "Risk and capital management" for detailed information on

the management of our material risks.

As part of our regular analysis, sensitivities of the key portfolio risks are reviewed using a bottom-up risk assessment, complemented by a top-down macro-economic and political scenario analysis. This two-pronged approach allows us to capture risk drivers that have an impact across our risk portfolios and business divisions as well as those relevant to specific portfolios.

Global growth concerns fueled a sharp deterioration in risk sentiment coming into the end of 2018, with equities falling sharply and credit spreads widening. The global economic outlook has softened but in a baseline growth is expected to remain solid. In developed markets, the US economy is expected to continue growing at a strong and above-trend rate while Europe is expected to see a further slowdown in 2019. The picture in emerging markets is mixed with growth in China expected to moderate further.

Key downside risks include Brexit, where the risks of the UK leaving the EU without a withdrawal agreement are rising following the defeat of Prime Minister May's Brexit deal and the UK parliament's decision to seek a renegotiation of the backstop. A disorderly Brexit could aggravate the already softer economic outlook in the UK and Europe. Tensions between Italy and Brussels and an escalation of the yellow vest movement in France are potential additional sources of political risk in Europe. The potential for an escalation in global trade conflict also remains a key source of global downside risk.

The assessment of the potential impacts of these risks is made through, inter alia, portfolio reviews and group-wide stress tests which assess our ability to absorb events should they occur. The results of these tests showed that the currently available capital and liquidity reserves, in combination with available mitigation measures, would allow us to absorb the impact of these risks if they were to materialize in line with the tests' parameters. Information about risk and capital positions for our portfolios can be found in the "Risk and capital performance" section.

The overall focus of risk and capital management is on maintaining our risk profile in line with our risk strategy and supporting our strategic management initiatives with a focus on-balance sheet optimization.

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Risk profile

The table below shows our overall risk position as measured by the economic capital usage calculated for credit, market, operational and business risk for the dates specified. To determine our overall (economic capital) risk position, we generally consider diversification benefits across risk types.

Overall risk position as measured by economic capital usage by risk type

in € m. (unless stated otherwise)	Dec 31, 2018	Dec 31, 2017	2018 increase (decrease) from 2017	
			in € m.	in %
Credit risk	10,610	10,769	(159)	(1)
Market risk	10,341	10,428	(87)	(1)
Trading market risk	4,046	3,800	246	6
Nontrading market risk	6,295	6,628	(333)	(5)
Operational risk	7,359	7,329	30	0

Business risk	4,758	5,677	(918)	(16)
Diversification benefit ¹	(6,960)	(7,074)	114	(2)
Total economic capital usage	26,108	27,129	(1,020)	(4)

¹Diversification benefit across credit, market, operational and strategic risk (largest part of business risk).

As of December 31, 2018, our economic capital usage amounted to € 26.1 billion, which was € 1.0 billion or 4 % lower than € 27.1 billion economic capital usage as of December 31, 2017.

The economic capital usage for credit risk as of December 31, 2018 was € 0.2 billion or 1 % lower compared to year-end 2017 mainly due to a lower counterparty credit risk component and smaller increases in settlement and transfer risk components. The change in counterparty credit risk is mainly due to reductions in exposures from derivatives and securities financing transactions, partly offset by increases in lending, whereas the increases for settlement and transfer risk are largely driven by model overlays related to changes in methodology.

The economic capital usage for trading market risk increased to € 4.0 billion as of December 31, 2018, compared to € 3.8 billion at year-end 2017. The increase was primarily driven by a model enhancement to better capture the tail risk in the stressed period, which was partly offset by a reduction in the traded default risk component due to reductions in inventory. The nontrading market risk economic capital usage decreased by € 0.3 billion or 5 % compared to December 31, 2017. The decrease was mainly driven by an accounting methodology change due to IFRS 9 becoming effective and diversification effects.

The operational risk economic capital usage totaled € 7.4 billion as of December 31, 2018, which was € 30 million or 0.4 % higher than the € 7.3 billion economic capital usage as of December 31, 2017. In line with the development of our RWA for operational risk, the increase was driven by several, largely offsetting effects. A lighter loss profile feeding into our capital model and a number of model improvements, mostly from recalibrations of data weights, reduced our capital demand for operational risk. The decrease has been compensated by our reduced budgeted expected losses for operational risk. For a detailed description see the section “Operational Risk Management”.

Our business risk economic capital methodology captures strategic risk, which also implicitly includes elements of non-standard risks including refinancing and reputational risk, a tax risk component and a capital charge for IFRS deferred tax assets on temporary differences. The business risk decreased to € 4.8 billion as of December 31, 2018 which was € 0.9 billion or 16 % lower compared to € 5.7 billion as of December 31, 2017. The decrease is due to a lower economic capital usage for the strategic risk component of € 1.1 billion driven by a better earnings outlook in our plan for 2019 compared to the one for 2018 in the previous year which was partially offset by higher economic capital usage from IFRS deferred tax assets on temporary differences of € 0.1 billion.

The inter-risk diversification benefit of the economic capital usage across credit, market, operational and strategic risk decreased by € 0.1 billion mainly due to a lower economic capital usage for the strategic risk component.

Our mix of business activities results in diverse risk taking by our business divisions. We also measure the key risks inherent in their respective business models through the total economic capital metric, which mirrors each business division’s risk profile and takes into account cross-risk effects at group level.

Risk profile of our business divisions as measured by economic capital

Dec 31, 2018

Total

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in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Corporate & Other	Total	Total (in %)
Credit Risk	6,340	3,537	52	681	10,610	41
Market Risk	4,760	1,124	370	4,088	10,341	40
Operational Risk	6,092	866	401	0	7,359	28
Business Risk	3,521	29	0	1,208	4,758	18
Diversification Benefit ¹	(5,371)	(933)	(231)	(424)	(6,960)	(27)
Total EC	15,341	4,623	592	5,552	26,108	100
Total EC in %	59	18	2	21	100	N/M

N/M – Not meaningful

¹Diversification benefit across credit, market, operational and strategic risk (largest part of business risk).

	Dec 31, 2017 ¹					
in € m. (unless stated otherwise)	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Corporate & Other	Total	Total (in %)
Credit Risk	6,519	3,596	62	591	10,769	40
Market Risk	4,679	1,386	310	4,054	10,428	38
Operational Risk	5,995	932	402	0	7,329	27
Business Risk	4,435	10	99	1,133	5,677	21
Diversification Benefit ²	(5,450)	(950)	(264)	(410)	(7,074)	(26)
Total EC	16,178	4,974	609	5,368	27,129	100
Total EC in %	60	18	2	20	100	N/M

N/M – Not meaningful

¹Amounts allocated to the business segments have been restated to reflect comparatives according to the structure as of December 31, 2018.

²Diversification benefit across credit, market, operational and strategic risk (largest part of business risk).

Corporate & Investment Bank's (CIB) risk profile is dominated by its trading activities to support origination, structuring and market making activities, which gives rise to all major risk types. Credit risk is broadly distributed across business units but most prominent in Global Credit Trading, Rates, Trade Finance, and Leveraged Debt Capital Markets. The share of operational risk in CIB's risk profile reflects a high loss profile in the industry combined with internal losses and has only slightly increased compared to the year-end 2017. Market risk arises mainly from its trading and market making activities. The remainder of CIB's risk profile is derived from business risk reflecting earnings volatility risk. The economic capital usage for CIB decreased compared to the year-end 2017, mainly due to lower economic capital usage for the strategic risk component, primarily due to an updated strategic plan which reflected moderate improvement in planned operating income.

Private & Commercial Bank's (PCB) risk profile comprises credit risk from retail, small and medium-sized enterprises lending and wealth management activities as well as nontrading market risk from investment risk, interest rate risk, including risk arising from modelling of client deposits and credit spread risk. There was no significant change for economic capital usage across credit, operational and strategic risk compared to the year-end 2017 and lower

economic capital usage for market risk related to reductions in exposure to investment risk and interest rate risk.

Asset Management (AM), as a fiduciary asset manager, invests money on behalf of clients. As such, risk are primarily of a fiduciary nature and hence operationally driven. Nontrading market risk, however, does arise on guarantee products and co-investments in our funds. There was no significant change for economic capital usage compared to the year-end 2017.

Corporate & Other (C&O) mainly comprises nontrading market risk for structural foreign exchange risk, pension risk and equity compensation risk. The economic capital usage for credit and business risk increased compared to the year-end 2017 mainly due to a higher economic capital usage for transfer risk and IFRS deferred tax assets from temporary differences.

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Risk and capital framework

Risk management principles

The diversity of our business model requires us to identify, assess, measure, aggregate and manage our risks, and to allocate our capital among our businesses. Our aim is to help reinforce our resilience by encouraging a holistic approach to the management of risk and return throughout our organization as well as the effective management of our risk, capital and reputational profile. We actively take risks in connection with our business. The following principles underpin our risk management framework:

- Risk is taken within a defined risk appetite;
- Every risk taken needs to be approved within the risk management framework;
- Risk taken needs to be adequately compensated; and
- Risk should be continuously monitored and managed.

Risk and capital are managed via a framework of principles, organizational structures and measurement and monitoring processes that are closely aligned with the activities of the divisions and business units:

- Core risk management responsibilities are embedded in the Management Board and delegated to senior risk managers and senior risk management committees responsible for execution and oversight.
- We operate a Three Lines of Defense (“3LoD”) risk management model, in which risk, control and reporting responsibilities are defined.
- The 1st Line of Defense (“1st LoD”) refers to those roles in the Bank whose activities generate risks, whether financial or non-financial, and who own the risks that are generated in their respective organizations. The 1st LoD manages these risks within the defined risk appetite and ensures that organization, governance and structures are in place to identify, monitor, assess and accept or mitigate the risks they generate or are exposed to.
- The 2nd Line of Defense (“2nd LoD”) refers to the risk type controller roles in the Bank who facilitate the implementation of a sound risk management framework throughout the organization. The 2nd LoD defines the risk appetite and risk management and control standards for their risk type, and independently oversees and challenges the risk taking and risk management activities of the 1st LoD.
- The 3rd Line of Defense (“3rd LoD”) is Group Audit, which is accountable for providing independent and objective assurance on the adequacy of the design and effectiveness of the systems of internal control and risk management.
- The risk strategy is approved by the Management Board on an annual basis and is defined based on the Group

Risk Appetite and the Strategic and Capital Plan in order to align risk, capital and performance targets.

- Cross-risk analysis reviews are conducted across the Group to validate that sound risk management practices and a holistic awareness of risk exist.
- All material risk types, including credit risk, market risk, operational risk, liquidity risk, business risk and reputational risk, are managed via risk management processes. Modeling and measurement approaches for quantifying risk and capital demand are implemented across the material risk types. For more details, refer to section “Risk and Capital Management” for the management processes of our material risks.
- Monitoring, stress testing tools and escalation processes are in place for key capital and liquidity thresholds and metrics.
- Systems, processes and policies are critical components of our risk management capability.
- Recovery and contingency planning provides the escalation path for crisis management and supplies senior management with a set of actions designed to improve the capital and liquidity positions in a stress event.
- Resolution planning is the responsibility of our resolution authority, the Single Resolution Board. It provides a strategy to manage Deutsche Bank in case of default. It is designed to prevent major disruptions to the financial system or the wider economy through maintaining critical services.
- We apply an integrated risk management approach that aims at Group-wide consistency in risk management standards, while allowing for adaptation to local or legal entity specific requirements.

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We promote a strong risk culture where employees at all levels are responsible for the management and escalation of risks and are empowered and encouraged to act as risk managers. We expect employees to exhibit behaviors that support a strong risk culture in line with our Code of Conduct. To promote this, our policies require that risk-related behavior is taken into account during our performance assessment and compensation processes. This expectation continues to be reinforced through communications campaigns and mandatory training courses for all DB employees. In addition, our Management Board members and senior management frequently communicate the importance of a strong risk culture to support a consistent tone from the top.

A standards-based assessment of risk culture, in particular focusing on risk awareness, risk ownership and management of risk within risk appetite has been undertaken. Assessment results are incorporated into existing risk reporting, reinforcing the message that risk culture is an integral part of effective day-to-day risk management.

Risk governance

Our operations throughout the world are regulated and supervised by relevant authorities in each of the jurisdictions in which we conduct business. Such regulation focuses on licensing, capital adequacy, liquidity, risk concentration, conduct of business as well as organizational and reporting requirements. The European Central Bank (the “ECB”) in connection with the competent authorities of EU countries which joined the Single Supervisory Mechanism via the Joint Supervisory Team act in cooperation as our primary supervisors to monitor our compliance with the German Banking Act and other applicable laws and regulations as well as the CRR/CRD 4 framework and respective implementations into German law.

European banking regulators assess our capacity to assume risk in several ways, which are described in more detail in the section “Regulatory Capital” of this report.

Several layers of management provide cohesive risk governance:

- The Supervisory Board is informed regularly on our risk situation, risk management and risk controlling, as well as on our reputation and material litigation cases. It has formed various committees to handle specific tasks (for a detailed description of these committees, please see the “Corporate Governance Report” under “Management Board and Supervisory Board”, “Standing Committees”).
- At the meetings of the Risk Committee, the Management Board reports on key risk portfolios, on risk strategy and on matters of special importance due to the risks they entail. It also reports on loans requiring a Supervisory Board resolution pursuant to law or the Articles of Association. The Risk Committee deliberates with the Management Board on issues of the overall risk appetite, aggregate risk position and the risk strategy and supports the Supervisory Board in monitoring the implementation of this strategy.
- The Integrity Committee, among other responsibilities, monitors the Management Board’s measures that promote the company’s compliance with legal requirements, authorities’ regulations and the company’s own in-house policies. It also reviews the Bank’s Code of Business Conduct and Ethics, and, upon request, supports the Risk Committee in monitoring and analyzing the Bank’s legal and reputational risks.
- The Audit Committee, among other matters, monitors the effectiveness of the risk management system, particularly the internal control system and the internal audit system.
- The Management Board is responsible for managing Deutsche Bank Group in accordance with the law, the Articles of Association and its Terms of Reference with the objective of creating sustainable value in the interest of the company, thus taking into consideration the interests of the shareholders, employees and other stakeholders. The Management Board is responsible for establishing a proper business organization, encompassing appropriate and effective risk management. The Management Board established the Group Risk Committee (“GRC”) as the central forum for review and decision on material risk and capital-related topics. The GRC generally meets once a week. It has delegated some of its duties to individuals and sub-committees. The GRC and its sub-committees are described in more detail below.

Risk management governance structure of the Deutsche Bank Group

The following functional committees are central to the management of risk at Deutsche Bank:

- The Group Risk Committee (GRC) has various duties and dedicated authority, including approval of new or materially changed risk and capital models, review of high-level risk portfolios, risk exposure developments, and internal and regulatory Group-wide stress testing results, and monitoring of risk culture across the Group. The GRC sets risk appetite targets, for example in the form of limits or thresholds. In addition, the GRC reviews and recommends items for Management Board approval, such as key risk management principles, the Group Recovery Plan and the Contingency Funding Plan, over-arching risk appetite parameters, and recovery and escalation indicators. The GRC also supports the Management Board during Group-wide risk and capital planning processes.
- The Non-Financial Risk Committee (NFRC) oversees, governs and coordinates the management of non-financial risks in Deutsche Bank Group and establishes a cross-risk and holistic perspective of the key non-financial risks of the Group, including conduct and financial crime risk. It is tasked to define the non-financial risk appetite tolerance framework, to monitor and control the effectiveness of the non-financial risk operating model (including interdependencies between business divisions and control functions), and to monitor the development of emerging non-financial risks relevant for the Group.
- The Group Reputational Risk Committee (GRRC) is responsible for the oversight, governance and coordination of reputational risk management and provides for a look-back and a lessons learnt process. It reviews and decides all reputational risk issues escalated by the Regional Reputational Risk Committees (“RRRCs”) and RRRC decisions which have been appealed by the business divisions, infrastructure functions or regional management. It provides guidance on Group-wide reputational risk matters, including communication of sensitive topics, to the appropriate levels of Deutsche Bank Group. The RRRCs which are

sub-committees of the GRRC, are responsible for the oversight, governance and coordination of the management of reputational risk in the respective regions on behalf of the Management Board.

- The Enterprise Risk Committee (ERC) has been established with a mandate to focus on enterprise-wide risk trends, events and cross-risk portfolios, bringing together risk experts from various risk disciplines. As part of its mandate, the ERC approves the enterprise risk inventory, certain country and industry threshold increases, and scenario design outlines for more severe group-wide stress tests as well as reverse stress tests. It reviews group-wide stress test results in accordance with risk appetite, reviews the risk outlook, emerging risks and topics with enterprise-wide risk implications like risk culture.

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- The Financial Resource Management Council (FRMC) is an ad-hoc governance body, chaired by the Chief Financial Officer and Chief Risk Officer with delegated authority from the Management Board, to oversee financial crisis management at the bank. The FRMC provides a single forum to oversee execution of both the Contingency Funding Plan and the Group Recovery Plan. The council recommends upon mitigating actions to be taken in a time of anticipated or actual capital or liquidity stress. Specifically, the FRMC is tasked with analyzing the bank's capital and liquidity position, in anticipation of a stress scenario recommending proposals for capital and liquidity related matters, and ensure execution of decisions.
- The Group Asset & Liability Committee has been established by the Management Board in 2018. Its mandate is to optimize the sourcing and deployment of the bank's balance sheet and financial resources within the overarching risk appetite set by the Management Board.

Our Chief Risk Officer (CRO), who is a member of the Management Board, has Group-wide, supra-divisional responsibility for the management of all credit, market, liquidity and operational risks as well as for the continuing development and enhancement of methods for risk measurement. In addition, the CRO is responsible for monitoring, analyzing and reporting risk on a comprehensive basis.

The CRO has direct management responsibility for the Risk function. Risk management & control duties in the Risk function are generally assigned to specialized risk management units focusing on the management of

- Specific risk types
- Risks within a specific business
- Risks in a specific region.

These specialized risk management units generally handle the following core tasks:

- Foster consistency with the risk appetite set by the GRC within a framework established by the Management Board and applied to Business Divisions;
- Determine and implement risk and capital management policies, procedures and methodologies that are appropriate to the businesses within each division;
- Establish and approve risk limits;
- Conduct periodic portfolio reviews to keep the portfolio of risks within acceptable parameters; and
- Develop and implement risk and capital management infrastructures and systems that are appropriate for each division.

Additionally, Business Aligned Risk Management (BRM) represents the Risk function vis-à-vis specific business areas. The CROs for each business division manage their respective risk portfolio, taking a holistic view of each division to challenge and influence the division's strategy and risk ownership and implement risk appetite.

The specialized risk management functions are complemented by our Enterprise Risk Management (ERM) function, which sets a bank-wide risk management framework seeking to ensure that all risks at the Group and Divisional level

are identified, owned and assessed for materiality. Material risks are owned and controlled by functional (usually 1st LoD) risk teams within the agreed risk appetite and risk management principles. ERM is responsible for aggregating and analyzing enterprise-wide risk information, including review of the risk/return profiles of portfolios to support informed strategic decision-making regarding the effective application of the Bank's resources. ERM has the mandate to:

- Manage enterprise risk appetite at Group level, including the framework and methodology as to how appetite is applied across risk types, divisions, businesses and legal entities;
- Integrate and aggregate risks to provide greater enterprise risk transparency to support decision making;
- Commission forward-looking stress tests and manage Group recovery and resolution plans; and
- Govern and improve the effectiveness of the risk management framework.

The specialized risk management functions and ERM have a reporting line to the CRO.

While operating independently from each other and the business divisions, our Finance and Risk functions have the joint responsibility to quantify and verify the risk that we assume.

In May 2018, we fully merged our subsidiary Deutsche Postbank AG into the subsidiary DB PGK AG, to form "DB Privat- und Firmenkundenbank AG" (DB PFK AG). As a result, the existing joint risk management for the previously individual subsidiaries has been adjusted to reflect the new setup and size of the entity. The joint risk management of our enlarged subsidiary DB PFK AG is promoted through harmonized processes for identifying, assessing, managing, monitoring, and communicating risk, the strategies and procedures for determining and safeguarding risk-bearing capacity, and corresponding internal control procedures as well as joint governance.

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Key features of the adjusted setup are:

- Established DB PFK AG Risk Management structure which continues to have additional functional reporting lines into Deutsche Bank AG Risk
- Involvement of the central DB PFK AG Risk Committee in the Group Risk Committee through mutual memberships
- Extension of selected risk committees of DB PFK AG to include voting members of relevant risk functions of Deutsche Bank AG, and vice versa
- Alignment to key Group risk policies
- Joint DB PFK AG reporting across the merged portfolios for all risk types and inclusion of DB PFK AG in the Group Risk and Capital Profile
- Independent DB PFK AG business and risk strategy aligned with and embedded in the Group Risk Appetite Framework, Strategy and Policies

Risk appetite and capacity

Risk appetite expresses the aggregate level of risk that we are willing to assume to achieve our strategic objectives, as defined by a set of quantitative metrics and qualitative statements. Risk capacity is defined as the maximum level of risk we can assume given our capital and liquidity base, risk management and control capabilities, and our regulatory constraints.

Risk appetite is an integral element in our business planning processes via our risk strategy and plan, to promote the appropriate alignment of risk, capital and performance targets, while at the same time considering risk capacity and appetite constraints from both financial and non-financial risks. Compliance of the plan with our risk appetite and capacity is also tested under stressed market conditions. Top-down risk appetite serves as the limit for risk-taking for the bottom-up planning from the business functions.

The Management Board reviews and approves our risk appetite and capacity on an annual basis, or more frequently in the event of unexpected changes to the risk environment, with the aim of ensuring that they are consistent with our Group's strategy, business and regulatory environment and stakeholders' requirements.

In order to determine our risk appetite and capacity, we set different group level triggers and thresholds on a forward looking basis and define the escalation requirements for further action. We assign risk metrics that are sensitive to the material risks to which we are exposed and which are able to function as key indicators of financial health. In addition to that, we link our risk and recovery management governance framework with the risk appetite framework.

Reports relating to our risk profile as compared to our risk appetite and strategy and our monitoring thereof are presented regularly up to the Management Board. In the event that our desired risk appetite is breached, a predefined escalation governance matrix is applied so these breaches are highlighted to the respective committees.

Risk and capital plan

Strategic and capital plan

We conduct annually an integrated strategic planning process which lays out the development of our future strategic direction for us as a Group and for our business areas. The strategic plan aims to create a holistic perspective on capital, funding and risk under risk-return considerations. This process translates our long-term strategic targets into measurable short- to medium-term financial targets and enables intra-year performance monitoring and management. Thereby we aim to identify growth options by considering the risks involved and the allocation of available capital resources to drive sustainable performance. Risk-specific portfolio strategies complement this framework and allow for an in-depth implementation of the risk strategy on portfolio level, addressing risk specifics including risk concentrations.

The strategic planning process consists of two phases: a top-down target setting and a bottom-up substantiation.

In a first phase – the top-down target setting – our key targets for profit and loss (including revenues and costs), capital supply, capital demand as well as leverage, funding and liquidity are discussed for the group and the key business areas. In this process, the targets for the next five years are based on our global macro-economic outlook and the expected regulatory framework. Subsequently, the targets are approved by the Management Board.

In a second phase, the top-down objectives are substantiated bottom-up by detailed business unit plans, which consist of a month by month operative plan; years two and three are planned per quarter and years four and five are annual plans. The proposed bottom-up plans are reviewed and challenged by Finance and Risk and are discussed individually with the business heads. Thereby, the specifics of the business are considered and concrete targets decided in line with our strategic direction. The bottom-up plans include targets for key legal entities to review local risk and capitalization levels. Stress tests complement the strategic plan to also consider stressed market conditions.

The resulting Strategic and Capital Plan is presented to the Management Board for discussion and approval. The final plan is presented to the Supervisory Board.

The Strategic and Capital Plan is designed to support our vision of being a leading European bank with a global reach supported by a strong home base in Germany and aims to ensure:

- Balanced risk adjusted performance across business areas and units;
- High risk management standards with focus on risk concentrations;
- Compliance with regulatory requirements;
- Strong capital and liquidity position; and
- Stable funding and liquidity strategy allowing for business planning within the liquidity risk appetite and regulatory requirements.

The Strategic and Capital Planning process allows us to:

- Set earnings and key risk and capital adequacy targets considering the bank's strategic focus and business plans;
- Assess our risk-bearing capacity with regard to internal and external requirements (i.e., economic capital and regulatory capital); and
- Apply an appropriate stress test to assess the impact on capital demand, capital supply and liquidity.

All externally communicated financial targets are monitored on an ongoing basis in appropriate management committees. Any projected shortfall versus targets is discussed together with potential mitigating strategies with the aim to ensure that we remain on track to achieve our targets. Amendments to the strategic and capital plan must be approved by the Management Board. Achieving our externally communicated solvency targets ensures that we also comply with the Group Supervisory Review and Evaluation Process (SREP) requirements as articulated by our home supervisor. Deutsche Bank was informed by the ECB of its decision regarding prudential minimum capital requirements for 2019 that apply from March 1, 2019 onwards, following the results of the 2018 SREP. The decision requires Deutsche Bank to maintain a CET 1 ratio of at least 11.82 % on a consolidated basis. This CET 1 capital requirement comprises the Pillar 1 minimum capital requirement of 4.50 %, the Pillar 2 requirement (SREP add-on) of 2.75 %, the capital conservation buffer of 2.50 %, the countercyclical buffer (currently 0.07 %) and the G-SII buffer of 2.00 %. The new CET 1 capital requirement of 11.82 % for 2019 is higher than the CET 1 capital requirement of 10.69 %, which was applicable to Deutsche Bank in 2018, reflecting the now fully phase-in capital conservation buffer and the G-SII buffer. Correspondingly, 2019 requirements for Deutsche Bank's Tier 1 capital ratio are at 13.32 % and for its total capital ratio at 15.32 %. Also, the ECB communicated to us an individual expectation to hold a further "Pillar 2" CET 1 capital add-on, commonly referred to as the "Pillar 2" guidance'. The capital add-on pursuant to the "Pillar 2" guidance is separate from and in addition to the Pillar 2 requirement. The ECB has stated that it expects banks to meet the "Pillar 2" guidance although it is not legally binding, and failure to meet the "Pillar 2" guidance does not lead to automatic restrictions of capital distributions.

Internal Capital Adequacy Assessment Process

Deutsche Bank's internal capital adequacy assessment process (ICAAP) consists of several well-established components which ensure that Deutsche Bank maintains sufficient capital to cover the risks to which the bank is exposed on an ongoing basis:

- Risk identification and assessment: The risk identification process forms the basis of the ICAAP and results in an inventory of risks for the Group. All risks identified are assessed for their materiality. Further details can be found in section "Risk identification and assessment".
- Capital demand/risk measurement: Risk measurement methodologies and models are applied to quantify the

capital demand which is required to cover all material risks except for those which cannot be adequately limited by capital e.g. liquidity risk. Further details can be found in sections “Risk profile” and “Capital, Leverage Ratio and MREL”.

- Capital supply: Capital supply quantification refers to the definition of available capital resources to absorb unexpected losses. Further details can be found in section “Capital, Leverage Ratio and MREL”
- Risk appetite: Deutsche Bank has established Group risk appetite thresholds which express the level of risk that we are willing to assume to achieve our strategic objectives. Threshold breaches are subject to a dedicated governance framework triggering management actions aimed to safeguard capital adequacy. Further details can be found in sections “Risk appetite and capacity” and “Key risk metrics”.

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- Capital planning: The risk appetite thresholds for capital adequacy metrics constitute boundaries which have to be met to safeguard capital adequacy on a forward-looking basis. Further details can be found in section “Strategic and capital plan”.
- Stress testing: Capital plan figures are also considered under various stress test scenarios to prove resilience and overall viability of the bank. Capital adequacy metrics are also subject to regular stress tests throughout the year to constantly evaluate Deutsche Bank’s capital position in hypothetical stress scenarios and to detect vulnerabilities under stress. Further details can be found in section “Stress testing”.
- Capital adequacy assessment: Although capital adequacy is constantly monitored throughout the year, the ICAAP concludes with a dedicated annual capital adequacy assessment (CAS). The assessment consists of a Management Board statement about Deutsche Bank’s capital adequacy, which is linked to specific conclusions and management actions to be taken to safeguard capital adequacy on a forward-looking basis.

As part of its ICAAP, Deutsche Bank distinguishes between a normative and economic internal perspective. The normative internal perspective refers to the internal process aimed at the fulfilment of all capital-related legal requirements and supervisory demands on an ongoing basis. The economic internal perspective refers to an internal process aimed at capital adequacy using internal economic capital demand models and an internal economic capital supply definition. Both perspectives focus on maintaining the viability of Deutsche Bank on an ongoing basis.

Stress testing

Deutsche Bank is subject to stress test exercises to satisfy both internal as well as externally imposed stress test requirements. The internal stress tests are based on in-house developed methods and inform a variety of risk management use cases such as our risk appetite framework or capital allocation. The regulatory stress tests, e.g. the EBA stress test and the US-based CCAR (Comprehensive Capital Analysis and Review) stress tests are strictly following the processes and methodologies as prescribed by the regulatory authorities.

Our internal stress tests are performed on a regular basis in order to assess the impact of a severe economic downturn on our risk profile and financial position. These exercises complement traditional risk measures and represent an integral part of our strategic and capital planning process. Our stress testing framework comprises regular Group-wide stress tests based on internally defined scenarios of different severities and localizations. We include all material risk types into our stress testing exercises. The time-horizon of internal stress tests is generally one year and can be extended to multi-year, if required by the scenario assumptions. Our methodologies undergo regular scrutiny from Deutsche Bank’s internal validation team (Model Risk Management) whether they correctly capture the impact of a given stress scenario. These analyses are complemented by portfolio- and country-specific stress tests as well as regulatory requirements, such as annual reverse stress tests and additional stress tests requested by our regulators on group or legal entity level. Moreover, capital plan stress testing is performed to assess the viability of our capital plan in adverse circumstances and to demonstrate a clear link between risk appetite, business strategy, capital plan and stress testing. An integrated procedure allows us to assess the impact of ad-hoc scenarios that simulate potential

imminent financial or geopolitical shocks.

The initial phase of our internal stress tests consists of defining a macroeconomic downturn scenario by ERM Risk Research in cooperation with business specialists. ERM Risk Research monitors the political and economic development around the world and maintains a macro-economic heat map that identifies potentially harmful scenarios. Based on quantitative models and expert judgments, economic parameters such as foreign exchange rates, interest rates, GDP growth or unemployment rates are set accordingly to reflect the impact on our business. The scenario parameters are translated into specific risk drivers by subject matter experts in the risk units. Based on our internal models framework for stress testing, the following major metrics are calculated under stress: risk-weighted assets, impacts on profit and loss and economic capital by risk type. These results are aggregated at the Group level, and key metrics such as the CET 1 ratio, ECA ratio and Leverage Ratio under stress are derived. Stress impacts on the Liquidity Coverage Ratio (LCR) and the Liquidity Reserve are also considered. Prior to the impact assessment the more severe scenarios are discussed and approved by the Enterprise Risk Committee (ERC) which also reviews the final stress results. After comparing these results against our defined risk appetite, the ERC also discusses specific mitigation actions to remediate the stress impact in alignment with the overall strategic and capital plan if certain limits are breached. The results also feed into the recovery planning which is crucial for the recoverability of the Bank in times of crisis. The outcome is presented to senior management up to the Management Board to raise awareness on the highest level as it provides key insights into specific business vulnerabilities and contributes to the overall risk profile assessment of the bank. The group wide stress tests performed in 2018 indicated that the bank's capitalization together with available mitigation measures allow it to reach the internally set stress exit level, the latter being above regulatory early intervention levels. A reverse stress test is performed annually in order to challenge our business model by determining scenarios which would cause us to become unviable. Such a reverse stress test is based on a hypothetical macroeconomic scenario enriched by idiosyncratic events based on the top risks monitored by each risk type. Comparing the hypothetical scenario resulting in the Bank's non-viability to the current economic environment, we consider the probability of occurrence of such a hypothetical stress scenario as extremely low. Given this, we do not believe that our business continuity is at risk.

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Deutsche Bank also took part in two major regulatory stress tests performed in 2018, i.e. the biannual European EBA stress test as well as the US-based CCAR stress test. In the US, DB USA Corporation received no Federal Reserve (FRB) objections to its quantitative capital plan given its ample capital and liquidity under the stressed scenario. The entity, however, received a qualitative objection to the CCAR 2018 capital plan for weaknesses in governance, model methodology, validation, data and infrastructure.

The EBA stress test exercise 2018 was based on the newly introduced IFRS 9 accounting framework and did not prescribe any pass/fail threshold for the projected CET 1 and Leverage ratios under the macroeconomic base and adverse scenario.

Stress testing framework of Deutsche Bank Group

Risk reporting and measurement systems

Our risk measurement systems support regulatory reporting and external disclosures, as well as internal management reporting across credit, market, liquidity, cross, business, operational and reputational risks. The risk infrastructure incorporates the relevant legal entities and business divisions and provides the basis for reporting on risk positions, capital adequacy and limit, threshold or target utilization to the relevant functions on a regular and ad-hoc basis. Established units within Finance and Risk assume responsibility for measurement, analysis and reporting of risk while promoting sufficient quality and integrity of risk-related data. Our risk management systems are reviewed by Group

Audit following a risk-based audit approach.

Deutsche Bank's reporting is an integral part of Deutsche Bank's risk management approach and as such aligns with the organizational setup delivering consistent information on Group level and for material legal entities as well as breakdowns by risk types, business division and material business units.

The following principles guide Deutsche Bank's "risk reporting and monitoring" practices:

- Deutsche Bank monitors risks taken against risk appetite and risk-reward considerations on various levels across the Group, e.g. Group, business divisions, material business units, material legal entities, risk types, portfolio and counterparty levels.
- Risk reporting is required to be accurate, clear, useful and complete and must convey reconciled and validated risk data to communicate information in a concise manner to ensure, across material Financial and Non-Financial Risks, the bank's risk profile is easily and well understood.
- Senior risk committees, such as the Enterprise Risk Committee (ERC) and the Group Risk Committee (GRC), as well as the Management Board who are responsible for risk and capital management receive regular reporting (as well as ad-hoc reporting as required).
- Dedicated teams within Deutsche Bank proactively manage material Financial- and Non-Financial Risks and must ensure that required management information is in place to enable proactive identification and management of risks and avoid undue concentrations within a specific Risk Type and across Risks (Cross-Risk view).

In applying the previously mentioned principles, Deutsche Bank maintains a common basis for all risk reports and aims to minimize individual separate reporting efforts to allow Deutsche Bank to provide consistent information, which only differentiates by granularity and audience focus.

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The Bank identifies a large number of metrics within our risk measurement systems which support regulatory reporting and external disclosures, as well as internal management reporting across risks and for material risk types. Deutsche Bank designates a subset of those as "Key Risk Metrics" that represent the most critical ones for which the Bank places an appetite, limit, threshold or target at Group level and / or are reported routinely to senior management for discussion or decision making. The identified Key Risk Metrics include Capital Adequacy and Liquidity metrics; further details can be found in the section "Key risk metrics" .

While a large number of reports are used across the Bank, Deutsche Bank designates a subset of these as "Key Risk Reports" that are critical to support Deutsche Bank's Risk Management Framework through the provision of risk information to senior management and therefore enable the relevant governing bodies to monitor, steer and control the Bank's risk taking activities effectively.

The main reports on risk and capital management that are used to provide the central governance bodies with information relating to the Group risk profile are the following:

- The monthly Risk and Capital Profile (RCP) report is a Cross-Risk report, provides a comprehensive view of Deutsche Bank's risk profile and is used to inform the ERC, the GRC as well as the Management Board and subsequently the Risk Committee of the Supervisory Board. The RCP includes Risk Type specific and Business-Aligned overviews and Enterprise-wide risk topics. It also includes updates on Key Group Risk Appetite Metrics and other Key Portfolio Risk Type Control Metrics as well as updates on Key Risk Developments, highlighting areas of particular interest with updates on corresponding risk management strategies.

- An overview of our liquidity and solvency/leverage position is presented to the GRC and the Asset & Liability Committee (ALCO) by Group Capital Management and the Group Treasurer on a monthly basis. It comprises information on key metrics including CRR/CRD 4 Common Equity Tier 1 ratio, the CRR/CRD 4 Leverage Ratio, and MREL as well as an overview of our current funding and liquidity status, the liquidity stress test results and contingency measures.
- Group-wide macroeconomic stress tests are typically performed twice per quarter (or more frequently if required). They are reported to and discussed in the ERC and escalated to the GRC if deemed necessary. The stressed key performance indicators are benchmarked against the Group Risk Appetite thresholds.

While the above reports are used at a Group level to monitor and review the risk profile of Deutsche Bank holistically, there are other, supplementing standard and ad-hoc management reports that Risk Type or Business Aligned Risk Management functions use to monitor and control the risk profile.

Recovery and resolution planning

A number of jurisdictions such as the member states of the European Union, including Germany and the United Kingdom, as well as the United States, have enacted regulations requiring banks or competent regulatory authorities to develop recovery and resolution plans in order to be prepared for the management of a severe crisis up to a potential failure of a bank.

For the purpose of recovery planning, we maintain a Group recovery plan (Recovery Plan) which is updated and submitted to the European Central Bank (ECB) at least annually to reflect changes in the business and the regulatory requirements. The Recovery Plan prepares us to restore our financial strength and viability during an extreme stress situation, laying out a set of defined actions aimed to protect us, our customers and the markets and prevent a potential resolution event. In line with regulatory guidance, the Recovery Plan includes a wide range of countermeasures that are designed to mitigate different types of stress scenarios, originating from both idiosyncratic and market-wide events, that would threaten Deutsche Bank's capital and liquidity position. In addition, the Recovery Plan also outlines clear predefined governance and processes set up to support timely, efficient and effective monitoring, escalation, decision-making and implementation of recovery options if a crisis event occurs.

The Management Board oversees the development of the Recovery Plan and has set up a dedicated contingent governance process to manage financial stress events.

As set out in the Bank Recovery and Resolution Directive (BRRD), the German Recovery and Resolution Act (Sanierungs- und Abwicklungsgesetz, SAG) transforming the BRRD into German national legislation, and the Single Resolution Mechanism Regulation (the SRM Regulation), the Group resolution plan is prepared by the resolution authorities, rather than by the bank itself. We work closely with the Single Resolution Board (SRB) and the Bundesanstalt für Finanzdienstleistungsaufsicht ("BaFin") who establish the Group resolution plan for Deutsche Bank, which is currently based on a single point of entry (SPE) bail-in as the preferred resolution strategy. Under the SPE bail-in strategy, the parent entity Deutsche Bank AG would be recapitalized through a write-down and/or conversion to equity of capital instruments (Common Equity Tier 1, Additional Tier 1, Tier 2) and other eligible liabilities in order to stabilize the Group. Within one month after the application of the bail-in tool to recapitalize an institution, the BRRD (as implemented in the SAG) requires such institution to establish a business reorganization plan addressing the causes of failure and aiming to restore the institution's long-term viability.

The BRRD requires banks in EU member states to maintain minimum requirements for own funds and eligible liabilities (MREL) to make resolution credible by establishing sufficient loss absorption and recapitalization capacity. Apart from MREL-requirements, Deutsche Bank, as a global systemically important bank, will be subject to global minimum standards for Total Loss-Absorbing Capacity (TLAC), which set out strict requirements for the amount and eligibility of instruments to be maintained for bail-in purposes. In particular, TLAC instruments must be subordinated (including so-called senior “non-preferred” debt, but also in the form of regulatory capital instruments) to other senior liabilities. This ensures that a bail-in would be applied first to equity and TLAC instruments, which must be exhausted before a bail-in may affect other senior (“preferred”) liabilities such as deposits, derivatives, debt instruments that are “structured” and senior preferred plain vanilla bonds.

In the United States, Deutsche Bank AG is required under Title I of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Dodd-Frank Act”), as amended, and the implementing regulations therefor, to prepare and submit periodically to the Federal Reserve Board and the Federal Deposit Insurance Corporation (“FDIC”) a plan for the orderly resolution of subsidiaries and operations in the event of future material financial distress or failure (the “U.S. Resolution Plan”). For foreign-based companies subject to these resolution planning requirements such as Deutsche Bank AG, the U.S. Resolution Plan relates only to subsidiaries, branches, agencies and businesses that are domiciled in or whose activities are carried out in whole or in material part in the United States.

Deutsche Bank AG filed its most recent U.S. Resolution Plan in July 2018 and received written regulatory feedback in December 2018. The Federal Reserve and FDIC found that Deutsche Bank’s U.S. Resolution Plan had no deficiencies but identified one shortcoming in the plan, associated with governance mechanisms and related escalation triggers. Deutsche Bank is required to submit a response to its December 2018 feedback letter by April 5, 2019. Deutsche Bank’s response will discuss the remediation of the shortcoming as well as enhancements of its resolution capabilities. Both the remediation of the shortcoming and enhancements must be completed prior to the submission of our next U.S. Resolution Plan, which is currently expected to be due on July 1, 2020.

Risk and Capital Management

Capital management

Our Treasury function manages solvency, capital adequacy, leverage and bail-in capacity ratios at Group level and locally in each region, as applicable. Treasury implements our capital strategy, which itself is developed by the Group Risk Committee and approved by the Management Board. Treasury, directly or through the Group Asset and Liability Committee, which has been established in the first half of the year 2018, manages, among other things, issuance and repurchase of shares and capital instruments, hedging of capital ratios against foreign exchange swings, setting capacities for key financial resources, design of shareholders’ equity allocation, and regional capital planning. We are fully committed to maintaining our sound capitalization both from an economic and regulatory perspective. We continuously monitor and adjust our overall capital demand and supply in an effort to achieve an appropriate balance of the economic and regulatory considerations at all times and from all perspectives. These perspectives include book equity based on IFRS accounting standards, regulatory and economic capital as well as specific capital requirements from rating agencies.

Treasury manages the issuance and repurchase of capital instruments, namely Common Equity Tier 1, Additional Tier 1 and Tier 2 capital instruments as well as TLAC/MREL eligible debt instruments. Treasury constantly monitors the market for liability management trades. Such trades represent a countercyclical opportunity to create Common

Equity Tier 1 capital by buying back our issuances below par.

Our core currencies are Euro, US Dollar, Chinese Renminbi and Pound Sterling. Treasury manages the sensitivity of our capital ratios against swings in core currencies. The capital invested into our foreign subsidiaries and branches in the other non-core currencies is largely hedged against foreign exchange swings. Treasury determines which currencies are to be hedged, develops suitable hedging strategies in close cooperation with Risk Management and finally executes these hedges.

Resource limit setting

Usage of key financial resources is influenced through the following governance processes and incentives.

Target resource capacities are reviewed in our annual strategic plan in line with our CET 1 and Leverage Ratio ambitions. In a quarterly process, the Group Asset and Liability Committee, which insofar as it replaced the Group Risk Committee as decision body, approves divisional resource limits for Total Capital Demand and leverage exposure that are based on the strategic plan but adjusted for market conditions and the short-term outlook. Limits are enforced through a close monitoring process and an excess charging mechanism.

Overall regulatory capital requirements are principally driven by either our CET 1 ratio (solvency) or leverage ratio (leverage) requirements, whichever is the more binding constraint. For the internal capital allocation, the combined contribution of each segment to the Group's Common Equity Tier 1 ratio, the Group's Leverage ratio and the Group's Capital Loss under Stress are weighted to reflect their relative importance and level of constraint to the Group. Contributions to the Common Equity Tier 1 ratio and the Leverage ratio are measured through Risk-Weighted Assets (RWA) and Leverage Ratio Exposure (LRE) assuming full implementation of CRR/CRD 4 rules. The Group's Capital Loss under Stress is a measure of the Group's overall economic risk exposure under a defined stress scenario. In our performance measurement, our methodology also applies different rates for the cost of equity for each of the business segments, reflecting in a more differentiated way the earnings volatility of the individual business models. This enables improved performance management and investment decisions.

Regional capital plans covering the capital needs of our branches and subsidiaries across the globe are prepared on an annual basis and presented to the Group Investment Committee. Most of our subsidiaries are subject to legal and regulatory capital requirements. In developing, implementing and testing our capital and liquidity, we fully take such legal and regulatory requirements into account.

Further, Treasury is represented on the Investment Committee of the largest Deutsche Bank pension fund which sets the investment guidelines for this fund. This representation is intended to ensure that pension assets are aligned with pension liabilities, thus protecting our capital base.

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Risk Identification and Assessment

Our business activities generate credit risks, market risks, business risks, liquidity risks, cross risks, operational risks and reputational risks. We regularly identify risks to our business' and infrastructure's operations, also under stressed conditions, and assess the materiality of identified risks with respect to their severity and likelihood of materialization. The assessment of current risks is complemented by a view on emerging risks applying a forward-looking perspective. This risk identification and assessment process results in our risk inventory which captures the material risks across relevant businesses and entities. Regular updates to the risk inventory are reported to senior management together with the risk profile and inform our risk management processes.

Throughout 2018 we have strengthened the enterprise risk identification and assessment framework applicable to Deutsche Bank Group and key entities. The enhanced process involves both first line and second line input into risk identification and the assessment of the risks' materiality. This framework provides the basis, on which we can aggregate risks for the Group across businesses and entities. The resulting inventory of risks, after review and challenge by senior management, informs key risk management processes including the development of stress scenarios tailored to Deutsche Bank's risk profile, the calibration of risk appetite and the risk profile monitoring and reporting.

Credit Risk Management

Credit Risk framework

Credit Risk arises from all transactions where actual, contingent or potential claims against any counterparty, borrower, obligor or issuer (which we refer to collectively as "counterparties") exist, including those claims that we plan to distribute. These transactions are typically part of our non-trading lending activities (such as loans and contingent liabilities) as well as our direct trading activity with clients (such as OTC derivatives). These also include traded bonds and debt securities. Carrying values of equity investments are also disclosed in our Credit Risk section. We manage the respective positions within our market risk and credit risk frameworks.

Based on the annual risk identification and materiality assessment, Credit Risk is grouped into five categories, namely default/ migration risk, country risk, transaction/ settlement risk (exposure risk), mitigation (failure) risk and concentration risk.

- Default/Migration Risk is the risk that a counterparty defaults on its payment obligations or experiences material credit quality deterioration increasing the likelihood of a default.
- Country Risk is the risk that otherwise solvent and willing counterparties are unable to meet their obligations due to direct sovereign intervention or policies.
- Transaction/Settlement Risk (Exposure Risk) is the risk that arises from any existing, contingent or potential future positive exposure.
- Mitigation Risk is the risk of higher losses due to risk mitigation measures not performing as anticipated.
- Concentration Risk is the risk of an adverse development in a specific single counterparty, country, industry or product leading to a disproportionate deterioration in the risk profile of Deutsche Bank's credit exposures to that counterparty, country, industry or product.

We measure, manage/mitigate and report/monitor our credit risk using the following philosophy and principles:

- Our Credit Risk Management function is independent from our business divisions and in each of our divisions, credit decision standards, processes and principles are consistently applied.
- A key principle of credit risk management is client credit due diligence. Our client selection is achieved in collaboration with our business division counterparts who stand as a first line of defense.
- We aim to prevent undue concentration and tail-risks (large unexpected losses) by maintaining a diversified credit portfolio. Client, industry, country and product-specific concentrations are assessed and managed against our risk appetite.
- We maintain underwriting standards aiming to avoid large undue credit risk on a counterparty and portfolio level. In this regard we assume unsecured cash positions and actively use hedging for risk mitigation purposes. Additionally, we strive to secure our derivative portfolio through collateral agreements and may additionally hedge concentration risks to further mitigate credit risks from underlying market movements.
- Every new credit facility and every extension or material change of an existing credit facility (such as its tenor, collateral structure or major covenants) to any counterparty requires credit approval at the appropriate authority level. We assign credit approval authorities to individuals according to their qualifications,

experience and training, and we review these periodically.

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- We measure and consolidate all our credit exposures to each obligor across our consolidated Group on a global basis, in line with regulatory requirements.
- We manage credit exposures on the basis of the “one obligor principle” (as required under CRR Article 4(1)(39)), under which all facilities to a group of borrowers which are linked to each other (for example by one entity holding a majority of the voting rights or capital of another) are consolidated under one group.
- We have established within Credit Risk Management – where appropriate – specialized teams for deriving internal client ratings, analyzing and approving transactions, monitoring the portfolio or covering workout clients.
- Where required, we have established processes to report credit exposures at legal entity level.

Measuring Credit Risk

Credit Risk is measured by credit rating, regulatory and internal capital demand and key credit metrics mentioned below.

The credit rating is an essential part of the Bank’s underwriting and credit process and builds the basis for risk appetite determination on a counterparty and portfolio level, credit decision and transaction pricing as well the determination of credit risk regulatory capital. Each counterparty must be rated and each rating has to be reviewed at least annually. Ongoing monitoring of counterparties helps keep ratings up-to-date. There must be no credit limit without a credit rating. For each credit rating the appropriate rating approach has to be applied and the derived credit rating has to be established in the relevant systems. Different rating approaches have been established to best reflect the specific characteristics of exposure classes, including central governments and central banks, institutions, corporates and retail.

Counterparties in our non-homogenous portfolios are rated by our independent Credit Risk Management function. Country risk related ratings are provided by ERM Risk Research.

Our rating analysis is based on a combination of qualitative and quantitative factors. When rating a counterparty we apply in-house assessment methodologies, scorecards and our 21-grade rating scale for evaluating the credit-worthiness of our counterparties.

Changes to existing credit models and introduction of new models are approved by the Regulatory Credit Risk Model Committee (RCRMC) chaired by the Head of CRM, as well as by the Head of Model Risk Management or delegate under a delegated authority, where appropriate, before the methodologies are used for credit decisions and capital calculation for the first time or before they are significantly changed. Proposals with high impact are recommended for approval to the Group Risk Committee. Regulatory approval may also be required. The methodology validation is performed independently of model development by Model Risk Management. The results of the regular validation processes as stipulated by internal policies have to be brought to the attention of the Regulatory Credit Risk Model Forum (RCRMF) and the RCRMC, even if the validation results do not lead to a change. The validation plan for rating methodologies is presented to RCRMF at the beginning of the calendar year.

For Postbank, and since May 2018 for DB PFK AG, responsibility for implementation, validation and monitoring of internal rating systems effectiveness is with Postbank’s/DB PFK AG’s Group Risk Controlling function and overseen by the model and validation committee, chaired by Postbank’s/ DB PFK AG’s Head of Group Risk Controlling. An independent model risk and validation function has been established in addition to the model risk development unit.

All rating systems are subject to approval by Postbank's/ DB PFK AG's Bank Risk Committee chaired by the Chief Risk Officer. In addition, DB Group's IRBA Governance is extended to all DB PFK AG models as part of the merger and the granted capital waiver. Effectiveness of rating systems and rating results are reported to the Postbank/ DB PFK AG Management Board on a regular basis. Joint governance is ensured via a cross committee membership of Deutsche Bank senior managers joining Postbank/ DB PFK AG committees and vice versa.

We measure risk-weighted assets to determine the regulatory capital demand for credit risk using "advanced", "foundation" and "standard" approaches of which advanced and foundation are approved by our regulator.

The advanced Internal Ratings Based Approach (IRBA) is the most sophisticated approach available under the regulatory framework for credit risk and allows us to make use of our internal credit rating methodologies as well as internal estimates of specific further risk parameters. These methods and parameters represent long-used key components of the internal risk measurement and management process supporting the credit approval process, the economic capital and expected loss calculation and the internal monitoring and reporting of credit risk. The relevant parameters include the probability of default (PD), the loss given default (LGD) and the maturity (M) driving the regulatory risk-weight and the credit conversion factor (CCF) as part of the regulatory exposure at default (EAD) estimation. For the majority of derivative counterparty exposures as well as securities financing transactions (SFT), we make use of the internal model method (IMM) in accordance with CRR and SolvV to calculate EAD. For most of our internal rating systems more than seven years of historical information is available to assess these parameters. Our internal rating methodologies aim at point-in-time rather than a through-the-cycle rating, but in line with regulatory solvency requirements, they are calibrated based on long-term averages of observed default rates.

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We apply the foundation IRBA to the majority of our remaining foundation IRBA eligible credit portfolios at Postbank/ DB PFK AG. The foundation IRBA is an approach available under the regulatory framework for credit risk allowing institutions to make use of their internal rating methodologies while using pre-defined regulatory values for all other risk parameters. Parameters subject to internal estimates include the PD while the LGD and the CCF are defined in the regulatory framework.

We apply the standardized approach to a subset of our credit risk exposures. The standardized approach measures credit risk either pursuant to fixed risk weights, which are predefined by the regulator, or through the application of external ratings. We assign certain credit exposures permanently to the standardized approach in accordance with Article 150 CRR. These are predominantly exposures to the Federal Republic of Germany and other German public sector entities as well as exposures to central governments of other European Member States that meet the required conditions. These exposures make up the majority of the exposures carried in the standardized approach and receive predominantly a risk weight of zero percent. For internal purposes, however, these exposures are subject to an internal credit assessment and fully integrated in the risk management and economic capital processes.

In addition to the above described regulatory capital demand, we determine the internal capital demand for credit risk via an economic capital model.

We calculate economic capital for the default risk, country risk and settlement risk as elements of credit risk. In line with our economic capital framework, economic capital for credit risk is set at a level to absorb with a probability of 99.9 % very severe aggregate unexpected losses within one year. Our economic capital for credit risk is derived from the loss distribution of a portfolio via Monte Carlo Simulation of correlated rating migrations. The loss distribution is modeled in two steps. First, individual credit exposures are specified based on parameters for the probability of default, exposure at default and loss given default. In a second step, the probability of joint defaults is modeled through the introduction of economic factors, which correspond to geographic regions and industries. The simulation of portfolio losses is then performed by an internally developed model, which takes rating migration and maturity effects into account. Effects due to wrong-way derivatives risk (i.e., the credit exposure of a derivative in the default

case is higher than in non-default scenarios) are modeled by applying our own alpha factor when deriving the exposure at default for derivatives and securities financing transactions under the CRR. We allocate expected losses and economic capital derived from loss distributions down to transaction level to enable management on transaction, customer and business level.

Besides the credit rating which is the key credit risk metric we apply for managing our credit portfolio, including transaction approval and the setting of risk appetite, we establish internal limits and credit exposures under these limits. Credit limits set forth maximum credit exposures we are willing to assume over specified periods. In determining the credit limit for a counterparty, we consider the counterparty's credit quality by reference to our internal credit rating. Credit limits and credit exposures are both measured on a gross and net basis where net is derived by deducting hedges and certain collateral from respective gross figures. For derivatives, we look at current market values and the potential future exposure over the relevant time horizon which is based upon our legal agreements with the counterparty. We generally also take into consideration the risk-return characteristics of individual transactions and portfolios. Risk-Return metrics explain the development of client revenues as well as capital consumption. In this regard we also look at the client revenues in relation to the balance sheet consumption.

IFRS 9 impairment approach

We determine credit loss allowances in accordance with IFRS 9 as follows:

- Stage 1 reflects financial instruments where it is assumed that credit risk has not increased significantly after initial recognition.
- Stage 2 contains all financial assets, that are not defaulted, but have experienced a significant increase in credit risk since initial recognition.
- Stage 3 consists of financial assets of clients which are defaulted in accordance of Capital Requirements Regulation (CRR) under Art. 178. The Group defines these financial assets as impaired.
- Significant increase in Credit Risk is determined using quantitative and qualitative information based on the Group's historical experience, credit risk assessment and forward-looking information.
- POCI are Purchased or Originated Credit-Impaired financial assets in Stage 3 where at the time of initial recognition there is objective evidence of impairment.

The IFRS 9 impairment approach is an integral part of the Group's Credit Risk Management. The estimation of ECL (Expected Credit Loss) which is the basis for the Group's credit loss allowance is either done via the Group's ECL engine or by Credit Officers on a case-by-case basis. In both cases, the calculation takes place for each financial asset individually. The Group ECL engine is used to calculate the credit loss allowance for all financial assets in the homogeneous portfolio as well as for all financial assets in the non-homogenous portfolios in Stage 1 and Stage 2. The credit loss allowance for our financial assets in our non-homogeneous portfolio in Stage 3 is determined by Credit Officers on a case by case basis.

For a more detailed description of these expressions and the approach, please refer to Note 1 - Significant Accounting Policies and Critical Accounting Estimates of the Consolidated Financial Statements and in the following sections.

Stage Determination

At initial recognition, financial assets which are not POCI are reflected in Stage 1. If there is a significant increase in credit risk, the financial asset is transferred to Stage 2. Significant increase in credit risk is determined by using rating-related and process-related indicators. In contrast, the assignment of a financial instrument to Stage 3 is based on the status of the obligor being in default.

Rating-related indicators: Based on a dynamic change in counterparty PDs that is linked to all transactions with the counterparty, the Group compares lifetime PD at the reporting date, with expectations at the date of initial recognition. Based on historically observed migration behavior and available forward-looking information, an expected forward rating distribution is obtained. A quantile of this distribution, which is defined for each counterparty class, is chosen as the threshold. If the remaining lifetime PD of a transaction according to current expectations exceeds the PD of the relevant threshold rating, the financial asset is considered to be significantly increased. The thresholds used to determine Stage 2 indicators are determined using expert judgment and validated annually.

Process-related Indicators: Process-related indicators are derived via usage of existing risk management indicators, which allow the Group to identify whether the credit risk of financial assets has significantly increased. These include obligors being added mandatorily to a credit watchlist, being mandatorily transferred to workout status, payments being 30 days or more overdue or in forbearance.

On an ongoing basis, as long as the condition for one or more of the indicators is fulfilled and the financial asset is not recognized as defaulted, the asset will remain in Stage 2. If none of the indicator conditions is any longer fulfilled and the financial asset is not defaulted, the asset transfers back to Stage 1. In case of a default, the financial asset is allocated to Stage 3. In the case that a previously defaulted financial asset ceases to be classified as defaulted, it transfers back to Stage 1 or Stage 2.

Expected Lifetime

The expected lifetime of a financial asset is a key factor in determining the lifetime expected credit losses (LTECL). Lifetime expected credit losses represent default events over the expected life of a financial asset. The Group measures expected credit losses considering the risk of default over the maximum contractual period (including any borrower's extension options) over which it is exposed to credit risk.

Retail overdrafts, credit card facilities and certain corporate revolving facilities typically include both a loan and an undrawn commitment component. The expected lifetime of such on-demand facilities exceeds their contractual life as they are typically cancelled only when the Group becomes aware of an increase in credit risk. The expected lifetime is estimated by taking into consideration historical information and the Group's Credit Risk Management actions such as credit limit reductions and facility cancellation. Where such facilities are subject to an individual review by Credit Risk Management, the lifetime for calculating expected credit losses is 12 months. For facilities not subject to individual review by Credit Risk Management, Deutsche Bank applies a lifetime for calculating expected credit losses of 24 months.

Forward-looking information

Under IFRS 9, the allowance for credit losses is based on reasonable and supportable forward looking information obtainable without undue cost or effort, which takes into consideration past events, current conditions and forecasts of future economic conditions.

To incorporate forward-looking information into Deutsche Bank's allowance for credit losses, the Group uses two key elements:

- As its base scenario, the Group uses the macroeconomic forecasts provided by its research department dbResearch. These forecasts cover a number of macroeconomic variables (e.g., GDP, unemployment rates and interest rates) and reflect dbResearch's view as to the most likely development of those variables, typically over a two year period and updated quarterly.
- This base scenario is then translated into a multiple scenario analysis by leveraging the Group-wide stress test environment. This environment generates the impact of a multitude of economic scenarios and is used as basis for deriving multi-year PD curves for different rating and counterparty classes, which are applied in the

calculation of expected credit losses and in the identification of significant deterioration in credit quality of financial assets as described previously.

The general use of forward-looking information, including macro-economic factors, as well as adjustments taking into account extraordinary factors, are monitored by the Group's Risk and Finance Credit Loss Provision Forum. In certain situations Credit Risk officers and senior management may have additional information in relation to specific portfolios to indicate that the distribution used by the stress testing framework is not appropriate. In such situations the Group would apply a judgmental overlay.

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Basis of inputs and assumptions and the estimation techniques

The Group calculates expected credit losses for each financial asset individually. Similarly, the determination of the need to transfer between stages is made on an individual asset basis.

The Group uses three main components to measure ECL. These are PD, Loss Given Default (LGD) and Exposure at Default (EAD). The Group has leveraged existing parameters used for determination of capital demand under the Basel Internal Ratings Based Approach and internal risk management practices as much as possible to calculate ECL. These parameters are adjusted where necessary to comply with IFRS 9 requirements (e.g. use of point in time ratings and removal of downturn elements in the regulatory parameters). Incorporating forecasts of future economic conditions into the measurement of expected credit losses influences the allowance for credit losses for each stage. In order to calculate lifetime expected credit losses, the Group's calculation includes deriving the corresponding lifetime PDs from migration matrices that reflect economic forecasts.

The expected credit loss calculation for Stage 3 distinguishes between transactions in homogeneous and non-homogenous portfolios, and purchased or originated credit-impaired transactions. For transactions that are in Stage 3 and in a homogeneous portfolio, a similar approach as for Stage 1 and 2 transactions is taken. Since a Stage 3 transaction is defaulted, the probability of default is equal to 100 %. To incorporate the currently available information, the LGD parameters are modelled to be time-dependent, thus capture the time dependency of recovery expectation after default.

The estimation techniques for the input factors are described in more detail below.

The one-year PD for counterparties is derived from our internal rating systems. The Group assigns a PD to each relevant counterparty credit exposure based at the 21-grade master rating scale for all of our exposure.

The counterparty ratings assigned are derived based on internally developed rating models which specify consistent and distinct customer-relevant criteria and assign a rating grade based on a specific set of criteria as given for a certain customer. The set of criteria is generated from information sets relevant for the respective customer segments including general customer behavior, financial and external data. The methods in use range from statistical scoring models to expert-based models taking into account the relevant available quantitative and qualitative information. Expert-based models are usually applied for counterparties in the exposure classes "Central governments and central banks", "Institutions" and "Corporates" with the exception of those "Corporates" segments for which sufficient data basis is available for statistical scoring models. For the latter as well as for the retail segment statistical scoring or hybrid models combining both approaches are commonly used. Quantitative rating methodologies are developed based on applicable statistical modelling techniques, such as logistic regression.

One-year PDs are extended to multi-year PD curves using through-the-cycle (TTC) matrices and macroeconomic forecasts provided by Deutsche Bank Research that define a macroeconomic base scenario. Based on these macroeconomic forecasts, TTC matrices are transformed into point-in-time (PIT) rating migration matrices, typically

for a two year period. The calculation of the PIT matrices is performed in the Group's stress testing environment, which provides a link between macroeconomic variables and the default and rating behavior of counterparties. The macroeconomic forecasts adjust the distribution of the respective macroeconomic factors and consequently, the rating migration matrices that define migration and default probabilities. The actual calculation is based on a Monte-Carlo simulation of multiple scenarios or on equivalent analytical techniques. Multi-year PDs and rating migration matrices are thus derived and applied to portfolios in scope for IFRS 9 which are categorized according to the following counterparty classes: retail Germany, retail Spain, retail Italy, financial institutions, midcaps, corporates, and sovereigns.

LGD is defined as the likely loss intensity in case of a counterparty default. It provides an estimation of the exposure that cannot be recovered in a default event and therefore captures the severity of a loss. Conceptually, LGD estimates are independent of a customer's probability of default. The LGD models ensure that the main drivers for losses (i.e., different levels and quality of collateralization and customer or product types or seniority of facility) are reflected in specific LGD factors. In our LGD models we assign collateral type specific LGD parameters to the collateralized exposure (collateral value after application of haircuts).

The EAD over the lifetime of a financial asset is modelled taking into account expected repayment profiles. We apply specific Credit Conversion Factors (CCFs) in order to calculate an EAD value. Conceptually, the EAD is defined as the expected amount of the credit exposure to a counterparty at the time of its default. In instances where a transaction involves an unused limit, a percentage share of this unused limit is added to the outstanding amount in order to appropriately reflect the expected outstanding amount in case of a counterparty default. This reflects the assumption that for commitments the utilization at the time of default might be higher than the utilization under IAS 39. When a transaction involves an additional contingent component (i.e., guarantees) a further percentage share is applied as part of the CCF model in order to estimate the amount of guarantees drawn in case of default. The calibrations of such parameters are based on statistical experience as well as internal historical data and consider counterparty and product type specifics.

Consideration of Collateralization in IFRS 9 Expected Credit Loss calculation

The LTECL engine projects the level of collateralization for each point in time in the life of a financial asset. For the reporting date, the engine uses the existing collateral distribution process applied for the DB's Economic Capital model. In this model, the liquidation value of each eligible collateral is allocated to relevant financial assets to distinguish between collateralized and uncollateralized parts of each exposure.

For personal collateral, the LTECL engine assumes that the relative level of collateralization remains stable over time. In that case the absolute exposure and collateral values decrease together over time. For impersonal collateral, the LTECL shall assume that the absolute collateral value remains constant. In that case, the collateralized part of the exposure increases over time and consequently the exposure will be fully collateralized at some point.

Certain financial guarantee contract are integral to the financial assets guaranteed. In such cases, the financial guarantee is considered as collateral for the financial asset and the benefit of the guarantee is used to mitigate the ECL of the guaranteed financial asset.

For further details on how we determine the liquidation value of our collaterals please refer to section "Managing and Mitigation of Credit Risk"

Model sensitivity

There are two main sources of ECL volatility for Stage 1 and 2 assets. Similarly to traditional risk measures like Risk Weighted Assets or Economic Capital, our ECL is sensitive to changes in the portfolio relevant for IFRS 9. Changes to the portfolio composition, the exposure profile or counterparty ratings, which are particularly important due to potential implications on stage determination, influence the level of ECL and thus the level of our Credit Loss Allowance.

In addition to portfolio changes, ECL is also impacted by macroeconomic forecasts. The selection process for the macroeconomic variables combines expert assessment and statistical tests and reflects the characteristics of the individual portfolios. As a consequence, ECL sensitivities to macroeconomic forecasts are portfolio-specific with GDP growth rates and unemployment rates in the Eurozone and the US as dominant factors.

Managing and mitigation of Credit Risk

Managing Credit Risk on counterparty level

Credit-related counterparties are principally allocated to credit officers within credit teams which are aligned to types of counterparty (such as financial institutions, corporates or private individuals) or economic area (e.g., emerging markets) and dedicated rating analyst teams. The individual credit officers have the relevant expertise and experience to manage the credit risks associated with these counterparties and their associated credit related transactions. For retail clients, credit decision making and credit monitoring is highly automated for efficiency reasons. Credit Risk Management has full oversight of the respective processes and tools used in the retail credit process. It is the responsibility of each credit officer to undertake ongoing credit monitoring for their allocated portfolio of counterparties. We also have procedures in place intended to identify at an early stage credit exposures for which there may be an increased risk of loss.

In instances where we have identified counterparties where there is a concern that the credit quality has deteriorated or appears likely to deteriorate to the point where they present a heightened risk of loss in default, the respective exposure is generally placed on a “watchlist”. We aim to identify counterparties that, on the basis of the application of our risk management tools, demonstrate the likelihood of problems well in advance in order to effectively manage the credit exposure and maximize the recovery. The objective of this early warning system is to address potential problems while adequate options for action are still available. This early risk detection is a tenet of our credit culture and is intended to ensure that greater attention is paid to such exposures.

Credit limits are established by the Credit Risk Management function via the execution of assigned credit authorities. This also applies to settlement risk that must fall within limits pre-approved by Credit Risk Management considering risk appetite and in a manner that reflects expected settlement patterns for the subject counterparty. Credit approvals are documented by the signing of the credit report by the respective credit authority holders and retained for future reference.

Credit authority is generally assigned to individuals as personal credit authority according to the individual’s professional qualification, experience and training. All assigned credit authorities are reviewed on a periodic basis to help ensure that they are commensurate with the individual performance of the authority holder.

Where an individual’s personal authority is insufficient to establish required credit limits, the transaction is referred to a higher credit authority holder or where necessary to an appropriate credit committee. Where personal and committee authorities are insufficient to establish appropriate limits, the case is referred to the Management Board for approval.

Mitigation of Credit Risk on counterparty level

In addition to determining counterparty credit quality and our risk appetite, we also use various credit risk mitigation techniques to optimize credit exposure and reduce potential credit losses. Credit risk mitigants are applied in the following forms:

- Comprehensive and enforceable credit documentation with adequate terms and conditions.
- Collateral held as security to reduce losses by increasing the recovery of obligations.
- Risk transfers, which shift the loss arising from the probability of default risk of an obligor to a third party including hedging executed by our Credit Portfolio Strategies Group.
- Netting and collateral arrangements which reduce the credit exposure from derivatives and securities financing transactions (e.g. repo transactions).
- Hedging of derivatives counterparty risk including CVA, using primarily CDS contracts via our Counterparty Portfolio Management desk.

Collateral

We regularly agree on collateral to be received from or to be provided to customers in contracts that are subject to credit risk. Collateral is security in the form of an asset or third-party obligation that serves to mitigate the inherent risk of credit loss in an exposure, by either substituting the counterparty default risk or improving recoveries in the event of a default. While collateral can be an alternative source of repayment, it does not replace the necessity of high quality underwriting standards and a thorough assessment of the debt service ability of the counterparty in line with CRR Article 194 (9).

We segregate collateral received into the following two types:

- Financial and other collateral, which enables us to recover all or part of the outstanding exposure by liquidating the collateral asset provided, in cases where the counterparty is unable or unwilling to fulfill its primary obligations. Cash collateral, securities (equity, bonds), collateral assignments of other claims or inventory, equipment (i.e., plant, machinery and aircraft) and real estate typically fall into this category. All financial collateral is regularly, mostly daily, revalued and measured against the respective credit exposure. The value of other collateral, including real estate, is monitored based upon established processes that includes regular revaluations by internal and/or external experts.
- Guarantee collateral, which complements the counterparty's ability to fulfill its obligation under the legal contract and as such is provided by third parties. Letters of credit, insurance contracts, export credit insurance, guarantees, credit derivatives and risk participations typically fall into this category. Guarantee collateral with a non-investment grade rating of the guarantor is limited.

Our processes seek to ensure that the collateral we accept for risk mitigation purposes is of high quality. This includes seeking to have in place legally effective and enforceable documentation for realizable and measurable collateral assets which are evaluated regularly by dedicated teams. The assessment of the suitability of collateral for a specific transaction is part of the credit decision and must be undertaken in a conservative way, including collateral haircuts that are applied. We have collateral type specific haircuts in place which are regularly reviewed and approved. In this regard, we strive to avoid "wrong-way" risk characteristics where the counterparty's risk is positively correlated with the risk of deterioration in the collateral value. For guarantee collateral, the process for the analysis of the guarantor's creditworthiness is aligned to the credit assessment process for counterparties.

The valuation of collateral is considered under a liquidation scenario. Liquidation value is equal to the expected proceeds of collateral monetization / realization in a base case scenario, wherein a fair price is achieved through careful preparation and orderly liquidation of the collateral. Collateral can either move in value over time (dynamic value) or not (static value). The dynamic liquidation value generally includes a safety margin or haircut over realizable

value to address liquidity and marketability aspects.

The Group assigns a liquidation value to eligible collateral, based on, among other things:

- the market value and / or lending value, notional amount or face value of a collateral as a starting point;
- the type of collateral; the currency mismatch, if any, between the secured exposure and the collateral; and a maturity mismatch, if any;
- the applicable legal environment or jurisdiction (onshore versus offshore collateral);
- the market liquidity and volatility in relation to agreed termination clauses;
- the correlation between the performance of the borrower and the value of the collateral, e.g., in the case of the pledge of a borrower's own shares or securities (in this case generally full correlation leads to no liquidation value);
- the quality of physical collateral and potential for litigation or environmental risks; and
- a determined collateral type specific haircut (0 – 100 %) reflecting collection risks (i.e. price risks over the average liquidation period and processing/utilization/sales cost) as specified in the respective policies.

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Collateral haircut settings are typically based on available historic internal and/or external recovery data (expert opinions may also be used, where appropriate). They also incorporate a forward-looking component in the form of collection and valuation forecast provided by experts within Risk Management. When data is not sufficiently available or inconclusive, more conservative haircuts than otherwise used must be applied. Haircut settings are reviewed at least annually.

Risk transfers

Risk transfers to third parties form a key part of our overall risk management process and are executed in various forms, including outright sales, single name and portfolio hedging, and securitizations. Risk transfers are conducted by the respective business units and by our Credit Portfolio Strategies Group (CPSG), in accordance with specifically approved mandates.

CPSG manages the residual credit risk of loans and lending-related commitments of the institutional and corporate credit portfolio, the leveraged portfolio and the medium-sized German companies' portfolio within our CIB Division.

Acting as a central pricing reference, CPSG provides the businesses with an observed or derived capital market rate for loan applications; however, the decision of whether or not the business can enter into the credit risk remains exclusively with Credit Risk Management.

CPSG is concentrating on two primary objectives within the credit risk framework to enhance risk management discipline, improve returns and use capital more efficiently:

- to reduce single-name credit risk concentrations within the credit portfolio and
- to manage credit exposures by utilizing techniques including loan sales, securitization via collateralized loan obligations, sub-participations and single-name and portfolio credit default swaps.

Netting and collateral arrangements for derivatives and Securities Financing Transactions

Netting is applicable to both exchange traded derivatives and OTC derivatives. Netting is also applied to securities financing transactions (e.g. repurchase, securities lending and margin lending transactions) as far as documentation, structure and nature of the risk mitigation allow netting with the underlying credit risk.

All exchange traded derivatives are cleared through central counterparties (CCPs), which interpose themselves between the trading entities by becoming the counterparty to each of the entities. Where legally required or where available and to the extent agreed with our counterparties, we also use CCP clearing for our OTC derivative transactions.

The Dodd-Frank Act and related Commodity Futures Trading Commission (CFTC) rules introduced in 2013 mandatory CCP clearing in the United States for certain standardized OTC derivative transactions, including certain interest rate swaps and index credit default swaps. Additionally, the CFTC adopted final rules in 2016 that require additional interest rate swaps to be cleared on a phased implementation schedule that ended in October 2018. The European Regulation (EU) No 648/2012 on OTC Derivatives, Central Counterparties and Trade Repositories (EMIR) and the Commission Delegated Regulations (EU) 2015/2205, (EU) 2015/592 and (EU) 2016/1178 based thereupon introduced mandatory CCP clearing in the EU clearing for certain standardized OTC derivatives transactions. Mandatory CCP clearing in the EU began for certain interest rate derivatives on June 21, 2016 and for certain iTraxx-based credit derivatives and additional interest rate derivatives on February 9, 2017. Article 4 (2) of EMIR authorizes competent authorities to exempt intragroup transactions from mandatory CCP clearing, provided certain requirements, such as full consolidation of the intragroup transactions and the application of an appropriate centralized risk evaluation, measurement and control procedure are met. The Bank successfully applied for the clearing exemption for most of its regulatory-consolidated subsidiaries with intragroup derivatives, including e.g., Deutsche Bank Securities Inc. and Deutsche Bank Luxembourg S.A. As of December 31, 2018, the Bank is allowed to make use of has obtained intragroup exemptions from the EMIR clearing obligation for 68 bilateral intragroup relationships. The extent of the exemptions differs as not all entities enter into relevant transaction types subject to the clearing obligation. Of the 68 intragroup relationships, 17 are relationships where both entities are established in the Union (EU) for which a full exemption has been granted, and 51 are relationships where one is established in a third country (“Third Country Relationship”). Third Country Relationships required repeat applications for each new asset class being subject to the clearing obligation; the process took place in the course of 2017. Such repeat applications have been filed for 39 of the Third Country Relationships, with one of those entities having been liquidated in the meantime. Due to “Brexit”, the status of some group entities changes from an EU entity to a third country entity in March 2019. There are two affected UK group entities, but we have not applied for any EMIR clearing exemption for those entities.

The rules and regulations of CCPs typically provide for the bilateral set off of all amounts payable on the same day and in the same currency (“payment netting”) thereby reducing our settlement risk. Depending on the business model applied by the CCP, this payment netting applies either to all of our derivatives cleared by the CCP or at least to those that form part of the same class of derivatives. Many CCP rules and regulations also provide for the termination, close-out and netting of all cleared transactions upon the CCP’s default (“close-out netting”), which reduced our credit risk. In our risk measurement and risk assessment processes we apply close-out netting only to the extent we have satisfied ourselves of the legal validity and enforceability of the relevant CCP’s close-out netting provisions.

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In order to reduce the credit risk resulting from OTC derivative transactions, where CCP clearing is not available, we regularly seek the execution of standard master agreements (such as master agreements for derivatives published by the International Swaps and Derivatives Association, Inc. (ISDA) or the German Master Agreement for Financial Derivative Transactions) with our counterparts. A master agreement allows for the close-out netting of rights and obligations arising under derivative transactions that have been entered into under such a master agreement upon the counterparty’s default, resulting in a single net claim owed by or to the counterparty. For parts of the derivatives business (e.g., foreign exchange transactions) we also enter into master agreements under which payment netting applies in respect to transactions covered by such master agreements, reducing our settlement risk. In our risk measurement and risk assessment processes we apply close-out netting only to the extent we have satisfied ourselves of the legal validity and enforceability of the master agreement in all relevant jurisdictions.

Also, we enter into credit support annexes (CSA) to master agreements in order to further reduce our derivatives-related credit risk. These annexes generally provide risk mitigation through periodic, usually daily, margining of the covered exposure. The CSAs also provide for the right to terminate the related derivative transactions upon the counterparty's failure to honor a margin call. As with netting, when we believe the annex is enforceable, we reflect this in our exposure measurement.

The Dodd-Frank Act and CFTC rules thereunder, including CFTC rule § 23.504, as well as EMIR and Commission Delegated Regulation based thereupon, namely Commission Delegated Regulation (EU) 2016/2251, introduced the mandatory use of master agreements and related CSAs, which must be executed prior to or contemporaneously with entering into an uncleared OTC derivative transaction. Similar documentation requirements can be found in the U.S. margin rules adopted by U.S. prudential regulators. Under those rules, we are required to post and collect initial margin and variation margin for our derivatives exposures with other derivatives dealers, as well as with our counterparties that (a) are "financial end users," as that term is defined in the U.S. margin rules, and (b) have an average daily aggregate notional amount of uncleared swaps, uncleared security-based swaps, foreign exchange forwards and foreign exchange swaps exceeding U.S.\$ 8 billion in June, July and August of the previous calendar year. The U.S. margin rules additionally require us to post and collect variation margin for our derivatives with other financial end user counterparties. These margin requirements are subject to a U.S.\$ 50 million threshold for initial margin and a zero threshold for variation margin, with a combined U.S.\$ 500,000 minimum transfer amount. The U.S. margin requirements have been in effect for large banks since September 2016, with additional variation margin requirements having come into effect March 1, 2017 and additional initial margin requirements phased in on an annual basis from September 2017 through September 2020.

Under Commission Delegated Regulation (EU) 2016/2251, which implements the EMIR margin requirements, the CSA must provide for daily valuation and daily variation margining based on a zero threshold and a minimum transfer amount of not more than € 500,000. For large derivative exposures exceeding € 8 billion, initial margin has to be posted as well. The variation margin requirements under EMIR apply as of March 1, 2017; the initial margin requirements will be subject to a staged phase-in until September 1, 2020. Under Article 31 of Commission Delegated Regulation (EU) 2016/2251, an EU party may decide to not exchange margin with counterparties in certain non-netting jurisdictions provided certain requirements are met. Pursuant to Article 11 (5) to (10) of EMIR competent authorities are authorized to exempt intragroup transactions from the margining obligation, provided certain requirements are met. While some of those requirements are the same as for the EMIR clearing exemptions (see above), there are additional requirements such as the absence of any current or foreseen practical or legal impediment to the prompt transfer of funds or repayment of liabilities between intragroup counterparties. The Bank plans to make use of this exemption. The Bank has successfully applied for the collateral exemption for some of its regulatory-consolidated subsidiaries with intragroup derivatives, including, e.g., Deutsche Bank Securities Inc. and Deutsche Bank Luxembourg S.A. As of December 31, 2018, the Bank has obtained intragroup exemptions from the EMIR collateral obligation for 14 bilateral intragroup relationships which are published under <https://www.db.com/company/en/intra-group-exemptions--marginig.htm>. For further 10 bilateral intragroup relationships, the EMIR margining exemption may be used based on Article 11 (5) of EMIR, i.e. without the need for any application, because both entities are established in the same EU Member State. Due to "Brexit", the status of two intragroup entities will change from an EU entity to that of a third country entity on March 29, 2019. This may trigger the need for a new application the process of which is currently under discussion with the national competent authority.

Certain CSAs to master agreements provide for rating-dependent triggers, where additional collateral must be pledged if a party's rating is downgraded. We also enter into master agreements that provide for an additional termination event upon a party's rating downgrade. These downgrade provisions in CSAs and master agreements usually apply to both parties but in some agreements may apply to us only. We analyze and monitor our potential contingent payment obligations resulting from a rating downgrade in our stress testing approach for liquidity risk on an ongoing basis. For an assessment of the quantitative impact of a downgrading of our credit rating please refer to table "Stress Testing Results" in the section "Liquidity Risk".

Concentrations within Credit Risk mitigation

Concentrations within credit risk mitigations taken may occur if a number of guarantors and credit derivative providers with similar economic characteristics are engaged in comparable activities with changes in economic or industry conditions affecting their ability to meet contractual obligations. We use a range of tools and metrics to monitor our credit risk mitigating activities.

For more qualitative and quantitative details in relation to the application of credit risk mitigation and potential concentration effects please refer to the section “Maximum Exposure to Credit Risk”.

Managing Credit Risk on portfolio level

On a portfolio level, significant concentrations of credit risk could result from having material exposures to a number of counterparties with similar economic characteristics, or who are engaged in comparable activities, where these similarities may cause their ability to meet contractual obligations to be affected in the same manner by changes in economic or industry conditions.

Our portfolio management framework supports a comprehensive assessment of concentrations within our credit risk portfolio in order to keep concentrations within acceptable levels.

Industry risk management

To manage industry risk, we have grouped our corporate and financial institutions counterparties into various industry sub-portfolios. Portfolios are regularly reviewed with the frequency of review according to portfolio size and risk profile as well as risk developments. Larger / riskier portfolios are reviewed at least on an annual basis. Reviews highlight industry developments and risks to our credit portfolio, review cross-risk concentration risks, analyze the risk/reward profile of the portfolio and incorporate the results of an economic downside stress test. Finally, this analysis is used to define the credit strategies for the portfolio in question.

In our Industry Limit framework, thresholds are established for aggregate credit limits to counterparties within each industry sub-portfolio. Regular overviews are prepared for the Enterprise Risk Committee to discuss recent developments and to agree on actions where necessary

Beyond credit risk, our Industry Risk Framework comprises of Market Risk thresholds for Traded Credit Positions while key non-financial risks are closely monitored.

Country risk management

Avoiding undue concentrations from a regional perspective is also an integral part of our credit risk management framework. In order to achieve this, country risk limits are applied to Emerging Markets as well as selected Developed Markets countries (based on internal country risk ratings). Similar to industry risk, country portfolios are regularly reviewed with the frequency of review according to portfolio size and risk profile as well as risk developments. Larger / riskier portfolios are reviewed at least on an annual basis. These reviews assess key macroeconomic developments and outlook, review portfolio composition and cross-risk concentration risks and analyze the risk/reward profile of the portfolio. Based on this, thresholds and strategies are set for countries and, where relevant, for the region as a whole.

In our Country Limit framework, thresholds are established for counterparty credit risk exposures in a given country to manage the aggregated credit risk subject to country-specific economic and political events. These thresholds include exposures to entities incorporated locally as well as subsidiaries of foreign multinational corporations. Also, gap risk thresholds are set to control the risk of loss due to intra-country wrong-way risk exposure.

Beyond credit risk, our Country Risk Framework comprises Market Risk thresholds for trading positions in emerging markets that are based on the P&L impact of potential stressed market events on these positions. Furthermore we take into consideration treasury risk comprising thresholds for capital positions and intra-group funding exposure of Deutsche Bank entities in above countries given the transfer risk inherent in these cross-border positions. Key non-financial risks are closely monitored.

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Our country risk ratings represent a key tool in our management of country risk. They are established by the independent ERM Risk Research function within Deutsche Bank and include:

- Sovereign rating: A measure of the probability of the sovereign defaulting on its foreign or local currency obligations.
- Transfer risk rating: A measure of the probability of a “transfer risk event”, i.e., the risk that an otherwise solvent debtor is unable to meet its obligations due to inability to obtain foreign currency or to transfer assets as a result of direct sovereign intervention.
- Event risk rating: A measure of the probability of major disruptions in the market risk factors relating to a country (interest rates, credit spreads, etc.). Event risks are measured as part of our event risk scenarios, as described in the section “Market Risk Measurement” of this report.

All sovereign and transfer risk ratings are reviewed, at least on an annual basis.

Product/Asset class specific risk management

Complementary to our counterparty, industry and country risk approach, we focus on product/asset class specific risk concentrations and selectively set limits, thresholds or indicators where required for risk management purposes. Specific risk limits are set in particular if a concentration of transactions of a specific type might lead to significant losses under certain conditions. In this respect, correlated losses might result from disruptions of the functioning of financial markets, significant moves in market parameters to which the respective product is sensitive, macroeconomic default scenarios or other factors. Specific focus is put on concentrations of transactions with underwriting risks where we underwrite commitments with the intention to sell down or distribute part of the risk to third parties. These commitments include the undertaking to fund bank loans and to provide bridge loans for the issuance of public bonds. The risk is that we may not be successful in the distribution of the facilities, meaning that we would have to hold more of the underlying risk for longer periods of time than originally intended. These underwriting commitments are additionally exposed to market risk in the form of widening credit spreads. We dynamically hedge this credit spread risk to be within the approved market risk limit framework.

A major asset class, in which DB is active in underwriting, is leverage lending, which we mainly execute through our Leveraged Debt Capital Markets (LDCM) business unit. The business model is a fee-based ‘originate to distribute’ approach based on the distribution of largely unfunded underwriting commitments into the capital market. The aforementioned risks regarding distribution and credit spread movement apply to this business unit, however, are managed under a range of specific notional as well as market risk limits. The latter require the business to also hedge its underwriting pipeline against market dislocations. The fee-based model of our LDCM business unit includes a restrictive approach to related credit exposures retained on DB’s balance sheet, which results in low hold levels for

individual clients leading to a diversified overall portfolio without any material concentration risks. The resulting longer-term on-balance sheet portfolio is also subject to a credit limit and hedging framework.

In addition to underwriting risk, we also focus on concentration of transactions with specific risk dynamics (including risk to commercial real estate and risk from securitization positions).

Furthermore, in our PCC businesses, we apply product-specific strategies setting our risk appetite for sufficiently homogeneous portfolios, such as the retail portfolios of mortgages and business and consumer finance products. In Wealth Management, target levels are set for global concentrations along products as well as based on type and liquidity of collateral.

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Market Risk Management

Market Risk framework

The vast majority of our businesses are subject to market risk, defined as the potential for change in the market value of our trading and invested positions. Risk can arise from changes in interest rates, credit spreads, foreign exchange rates, equity prices, commodity prices and other relevant parameters, such as market volatility and market implied default probabilities.

One of the primary objectives of Market Risk Management, a part of our independent Risk function, is to ensure that our business units' risk exposure is within the approved appetite commensurate with its defined strategy. To achieve this objective, Market Risk Management works closely together with risk takers ("the business units") and other control and support groups.

We distinguish between three substantially different types of market risk:

- Trading market risk arises primarily through the market-making and client facilitation activities of the Corporate & Investment Bank Corporate Division. This involves taking positions in debt, equity, foreign exchange, other securities and commodities as well as in equivalent derivatives.
- Traded default risk arising from defaults and rating migrations relating to trading instruments.
- Nontrading market risk arises from market movements, primarily outside the activities of our trading units, in our banking book and from off-balance sheet items. This includes interest rate risk, credit spread risk, investment risk and foreign exchange risk as well as market risk arising from our pension schemes, guaranteed funds and equity compensation. Nontrading market risk also includes risk from the modeling of client deposits as well as savings and loan products.

Market Risk Management governance is designed and established to promote oversight of all market risks, effective decision-making and timely escalation to senior management.

Market Risk Management defines and implements a framework to systematically identify, assess, monitor and report our market risk. Market risk managers identify market risks through active portfolio analysis and engagement with the business units.

Market Risk measurement

We aim to accurately measure all types of market risks by a comprehensive set of risk metrics embedding accounting, economic and regulatory considerations.

We measure market risks by several internally developed key risk metrics and regulatory defined market risk approaches.

Trading Market Risk

Our primary mechanism to manage trading market risk is the application of our risk appetite framework of which the limit framework is a key component. Our Management Board, supported by Market Risk Management, sets group-wide value-at-risk, economic capital and portfolio stress testing limits for market risk in the trading book. Market Risk Management allocates this overall appetite to our Corporate Divisions and individual business units within them based on established and agreed business plans. We also have business aligned heads within Market Risk Management who establish business limits, by allocating the limit down to individual portfolios, geographical regions and types of market risks.

Value-at-risk, economic capital and portfolio stress testing limits are used for managing all types of market risk at an overall portfolio level. As an additional and important complementary tool for managing certain portfolios or risk types, Market Risk Management performs risk analysis and business specific stress testing. Limits are also set on sensitivity and concentration/liquidity, exposure, business-level stress testing and event risk scenarios, taking into consideration business plans and the risk vs return assessment.

Business units are responsible for adhering to the limits against which exposures are monitored and reported. The market risk limits set by Market Risk Management are monitored on a daily, weekly and monthly basis, dependent on the risk management tool being used.

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Internally developed Market Risk Models

Value-at-Risk (VaR)

VaR is a quantitative measure of the potential loss (in value) of Fair Value positions due to market movements that should not be exceeded in a defined period of time and with a defined confidence level.

Our value-at-risk for the trading businesses is based on our own internal model. In October 1998, the German Banking Supervisory Authority (now the BaFin) approved our internal model for calculating the regulatory market risk capital for our general and specific market risks. Since then the model has been continually refined and approval has been maintained.

We calculate VaR using a 99 % confidence level and a one day holding period. This means we estimate there is a 1 in 100 chance that a mark-to-market loss from our trading positions will be at least as large as the reported VaR. For regulatory purposes, which include the calculation of our risk-weighted assets, the holding period is ten days.

We use one year of historical market data as input to calculate VaR. The calculation employs a Monte Carlo Simulation technique, and we assume that changes in risk factors follow a well-defined distribution, e.g. normal or non-normal (t, skew-t, Skew-Normal). To determine our aggregated VaR, we use observed correlations between the risk factors during this one year period.

Our VaR model is designed to take into account a comprehensive set of risk factors across all asset classes. Key risk factors are swap/government curves, index and issuer-specific credit curves, funding spreads, single equity and index prices, foreign exchange rates, commodity prices as well as their implied volatilities. To help ensure completeness in the risk coverage, second order risk factors, e.g. CDS index vs. constituent basis, money market basis, implied

dividends, option-adjusted spreads and precious metals lease rates are considered in the VaR calculation.

For each business unit a separate VaR is calculated for each risk type, e.g. interest rate risk, credit spread risk, equity risk, foreign exchange risk and commodity risk. For each risk type this is achieved by deriving the sensitivities to the relevant risk type and then simulating changes in the associated risk drivers. “Diversification effect” reflects the fact that the total VaR on a given day will be lower than the sum of the VaR relating to the individual risk types. Simply adding the VaR figures of the individual risk types to arrive at an aggregate VaR would imply the assumption that the losses in all risk types occur simultaneously.

The model incorporates both linear and, especially for derivatives, nonlinear effects through a combination of sensitivity-based and revaluation approaches.

The VaR measure enables us to apply a consistent measure across all of our fair value businesses and products. It allows a comparison of risk in different businesses, and also provides a means of aggregating and netting positions within a portfolio to reflect correlations and offsets between different asset classes. Furthermore, it facilitates comparisons of our market risk both over time and against our daily trading results.

When using VaR estimates a number of considerations should be taken into account. These include:

- The use of historical market data may not be a good indicator of potential future events, particularly those that are extreme in nature. This “backward-looking” limitation can cause VaR to understate future potential losses (as in 2008), but can also cause it to be overstated.
- Assumptions concerning the distribution of changes in risk factors, and the correlation between different risk factors, may not hold true, particularly during market events that are extreme in nature. The one day holding period does not fully capture the market risk arising during periods of illiquidity, when positions cannot be closed out or hedged within one day.
- VaR does not indicate the potential loss beyond the 99th quantile.
- Intra-day risk is not reflected in the end of day VaR calculation.
- There may be risks in the trading or banking book that are partially or not captured by the VaR model.

We are committed to the ongoing development of our internal risk models, and we allocate substantial resources to reviewing, validating and improving them. Additionally, we have further developed and improved our process of systematically capturing and evaluating risks currently not captured in our value-at-risk model. An assessment is made to determine the level of materiality of these risks and material risks are prioritized for inclusion in our internal model. Risks not in value-at-risk are monitored and assessed on a regular basis through our Risk Not In VaR (RNIV) framework.

Stressed Value-at-Risk

Stressed Value-at-Risk (SVaR) calculates a stressed value-at-risk measure based on a one year period of significant market stress. We calculate a stressed value-at-risk measure using a 99 % confidence level. The holding period is one day for internal purposes and ten days for regulatory purposes. Our SVaR calculation utilizes the same systems, trade information and processes as those used for the calculation of value-at-risk. The only difference is that historical market data and observed correlations from a period of significant financial stress (i.e., characterized by high volatilities) is used as an input for the Monte Carlo Simulation.

The time window selection process for the stressed value-at-risk calculation is based on the identification of a time window characterized by high levels of volatility in the top value-at-risk contributors. The identified window is then further validated by comparing the SVaR results to neighboring windows using the complete Group portfolio.

Incremental Risk Charge

Incremental Risk Charge captures default and credit rating migration risks for credit-sensitive positions in the trading book. It applies to credit products over a one-year capital horizon at a 99.9 % confidence level, employing a constant position approach. We use a Monte Carlo Simulation for calculating incremental risk charge as the 99.9 % quantile of the portfolio loss distribution and for allocating contributory incremental risk charge to individual positions.

The model captures the default and migration risk in an accurate and consistent quantitative approach for all portfolios. Important parameters for the incremental risk charge calculation are exposures, recovery rates, maturity ratings with corresponding default and migration probabilities and parameters specifying issuer correlations.

Comprehensive Risk Measure

Comprehensive Risk Measure captures incremental risk for the corporate correlation trading portfolio calculated using an internal model subject to qualitative minimum requirements as well as stress testing requirements. The comprehensive risk measure for the correlation trading portfolio is based on our own internal model.

We calculate the comprehensive risk measure based on a Monte Carlo Simulation technique to a 99.9 % confidence level and a capital horizon of one year. Our model is applied to the eligible corporate correlation trading positions where typical products include collateralized debt obligations, nth-to-default credit default swaps, and commonly traded index- and single-name credit default swaps used to risk manage these corporate correlation products.

Trades subject to the comprehensive risk measure have to meet minimum liquidity standards to be eligible. The model incorporates concentrations of the portfolio and nonlinear effects via a full revaluation approach.

For regulatory reporting purposes, the comprehensive risk measure represents the higher of the internal model spot value at the reporting dates, their preceding 12-week average calculation, and the floor, where the floor is equal to 8 % of the equivalent capital charge under the standardized approach securitization framework. Since the first quarter of 2016, the CRM RWA calculations include two regulatory-prescribed add-ons which cater for (a) stressing the implied correlation within nth-to-default baskets and (b) any stress test loss in excess of the internal model spot value.

The internal model comprehensive risk measure was decommissioned in the fourth quarter of 2018 following regulatory approval. The small remaining exposures captured by this model are now covered by the incremental risk charge and the market risk standardized approach.

Market Risk Standardized Approach

Market Risk Management monitors exposures and concentrations for certain exposures under the specific Market Risk Standardized Approach (“MRSA”). We use the MRSA to determine the regulatory capital charge for the specific market risk of trading book securitizations.

We also use the MRSA to determine the regulatory capital charge for longevity risk as set out in CRR/CRD 4 regulations. Longevity risk is the risk of adverse changes in life expectancies resulting in a loss in value on longevity linked policies and transactions. For risk management purposes, stress testing and economic capital allocations are also used to monitor and manage longevity risk. Furthermore, certain types of investment funds require a capital charge under the MRSA. For risk management purposes, these positions are also included in our internal reporting framework.

Market Risk Stress Testing

Stress testing is a key risk management technique, which evaluates the potential effects of extreme market events and movements in individual risk factors. It is one of the core quantitative tools used to assess the market risk of Deutsche Bank's positions and complements VaR and Economic Capital. Market Risk Management performs several types of stress testing to capture the variety of risks (Portfolio Stress Testing, individual specific stress tests and Event Risk Scenarios) and also contributes to Group-wide stress testing. These stress tests cover a wide range of severities designed to test the earnings stability and capital adequacy of the bank.

Trading Market Risk Economic Capital (TMR EC)

Our trading market risk economic capital model-scaled Stressed VaR based EC (SVaR based EC) - comprises two core components, the "common risk" component covering risk drivers across all businesses and the "business-specific risk" component, which enriches the Common Risk via a suite of Business Specific Stress Tests (BSSTs). Both components are calibrated to historically observed severe market shocks. Common risk is calculated using a scaled version of the Regulatory SVaR framework while BSSTs are designed to capture more product/business-related bespoke risks (e.g. complex basis risks) as well as higher order risks not captured in the common risk component.

Traded Default Risk Economic Capital (TDR EC)

TDR EC captures the relevant credit exposures across our trading and fair value banking books. Trading book exposures are monitored by MRM via single name concentration and portfolio thresholds which are set based upon rating, size and liquidity. Single name concentration risk thresholds are set for two key metrics: Default Exposure, i.e., the P&L impact of an instantaneous default at the current recovery rate (RR), and bond equivalent Market Value (MV), i.e. default exposure at 0 % recovery. In order to capture diversification and concentration effects we perform a joint calculation for traded default risk economic capital and credit risk economic capital. Important parameters for the calculation of traded default risk are exposures, recovery rates and default probabilities as well as maturities. The probability of joint rating downgrades and defaults is determined by the default and rating correlations of the portfolio model. These correlations are specified through systematic factors that represent countries, geographical regions and industries.

Trading Market Risk Reporting

Market Risk Management reporting creates transparency on the risk profile and facilitates the understanding of core market risk drivers to all levels of the organization. The Management Board and Senior Governance Committees receive regular reporting, as well as ad hoc reporting as required, on market risk, regulatory capital and stress testing. Senior Risk Committees receive risk information at a number of frequencies, including weekly or monthly.

Additionally, Market Risk Management produces daily and weekly Market Risk specific reports and daily limit utilization reports for each business owner.

Regulatory prudent valuation of assets carried at fair value

Pursuant to Article 34 CRR institutions shall apply the prudent valuation requirements of Article 105 CRR to all assets measured at fair value and shall deduct from CET 1 capital the amount of any additional value adjustments necessary.

We determined the amount of the additional value adjustments based on the methodology defined in the Commission Delegated Regulation (EU) 2016/101.

As of December 31, 2018 the amount of the additional value adjustments was € 1.5 billion. The December 31, 2017 amount was € 1.2 billion. The increase was largely driven by methodology enhancements throughout the year, with remaining impacts from changes in underlying risk exposures and market data moves.

As of December 31, 2018 the reduction of the expected loss from subtracting the additional value adjustments was € 45 million, which partly mitigated the negative impact of the additional value adjustments on our CET 1 capital.

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Nontrading Market Risk

Nontrading market risk arises primarily from outside the activities of our trading units, in our banking book and from certain off-balance sheet items. Significant market risk factors the Group is exposed to and are overseen by risk management groups in that area are:

- Interest rate risk (including risk from embedded optionality and changes in behavioral patterns for certain product types), credit spread risk, foreign exchange risk, equity risk (including investments in public and private equity as well as real estate, infrastructure and fund assets).
- Market risks from off-balance sheet items, such as pension schemes and guarantees, as well as structural foreign exchange risk and equity compensation risk.

Interest Rate Risk in the Banking Book

Interest rate risk in the banking book (IRRBB) is the current or prospective risk, to both the Group's capital and earnings, arising from movements in interest rates, which affect the Group's banking book exposures. This includes gap risk, which arises from the term structure of banking book instruments, basis risk, which describes the impact of relative changes in interest rates for financial instruments that are priced using different interest rate curves, as well as option risk, which arises from option derivative positions or from optional elements embedded in financial instruments.

The Group manages its IRRBB exposures using economic value as well as earnings based measures. Our Group Treasury division is mandated to manage the interest rate risk centrally, with Market Risk Management acting as an independent oversight function.

Economic value based measures look at the change in economic value of banking book assets, liabilities and off-balance sheet exposures resulting from interest rate movements, independent of the accounting treatment. Thereby the Group measures the change in Economic Value of Equity (Δ EVE) as the maximum decrease of the banking book economic value under the six standard scenarios defined by Basel Committee on Banking Supervision (BCBS) in addition to internal stress scenarios for risk steering purposes.

Earnings-based measures look at the expected change in Net Interest Income (NII), compared to a defined benchmark scenario, over a defined time horizon resulting from interest rate movements. Thereby the Group measures Δ NII as the maximum reduction in NII under the six standard scenarios defined by Basel Committee on Banking Supervision (BCBS) in addition to internal stress scenarios for risk steering purposes, compared to the Group's official capital planning, over a period of 12 months.

The Group employs mitigation techniques to immunize the interest rate risk arising from nontrading positions. The interest rate risk arising from nontrading asset and liability positions is managed through Treasury Pool Management,

with the most notable exception of DB Privat- und Firmenkundenbank AG, where the interest rate risk is managed by a dedicated risk management function. The residual interest rate risk positions are hedged with Deutsche Bank's trading books within the CIB division. The treatment of interest rate risk in our trading portfolios and the application of the value-at-risk model is discussed in the "Trading Market Risk" section of this document.

Positions in our banking books as well as the hedges described in the aforementioned paragraph follow the accounting principles as detailed in the "Notes to the Consolidated Financial Statements" section of this document.

The Model Risk Management group performs independent validation of models used for IRRBB measurement in line with Deutsche Bank's group-wide risk governance framework.

The calculation of VaR and sensitivities of interest rate risk is performed daily, whereas the measurement and reporting of economic value interest rate and earnings risk is performed on a monthly basis. The Group generally uses the same metrics in its internal management systems as it applies for the disclosure in this report. This is applicable to both the methodology as well as the modelling assumptions used when calculating the metrics. The only notable exception is the usage of a steady (i.e. unchanged) rates scenario as benchmark for the Δ NII calculation in the public disclosures, whereas the internal quantitative risk appetite metric will use the Group's official capital planning curve.

Deutsche Bank's key modelling assumptions are applied to the positions in our PCB division and parts of our CIB Division. Those positions are subject to risk of changes in our client's behavior with regard to their deposits as well as loan products.

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The Group manages the interest rate risk exposure of its Non-Maturity Deposits (NMDs) through a replicating portfolio approach to determine the average repricing maturity of the portfolio. For the purpose of constructing the replicating portfolio, the portfolio of NMDs is clustered by dimensions such as Business Unit, Currency, Product and Geographical Location. The main dimensions influencing the repricing maturity are elasticity of deposit rates to market interest rates, volatility of deposit balances and observable client behavior. For the reporting period the average repricing maturity assigned across all such replicating portfolio is 1.8 years and Deutsche Bank uses 15 years as the longest repricing maturity.

In the Loan and some of the Term deposit products Deutsche Bank considers early prepayment/withdrawal behavior of its customers. The parameters are based on historical observations, statistical analyses and expert assessments.

Furthermore, the Group generally calculates IRRBB related metrics in contractual currencies and aggregates the resulting metrics for reporting purposes. When calculating economic value based metrics the commercial margin is excluded to material parts.

Credit Spread Risk in the Banking Book

Deutsche Bank is exposed to credit spread risk of bonds held in the banking book, mainly as part of the Treasury Liquidity Reserves portfolio and in DB Privat- und Firmenkundenbank AG. This risk category is closely associated with interest rate risk in the banking book as changes in the perceived credit quality of individual instruments may result in fluctuations in spreads relative to underlying interest rates.

Foreign exchange risk

Foreign exchange risk arises from our nontrading asset and liability positions that are denominated in currencies other than the functional currency of the respective entity. The majority of this foreign exchange risk is transferred through internal hedges to trading books within Corporate & Investment Bank and is therefore reflected and managed via the value-at-risk figures in the trading books. The remaining foreign exchange risks that have not been transferred are mitigated through match funding the investment in the same currency, so that only residual risk remains in the portfolios. Small exceptions to above approach follow the general Market Risk Management monitoring and reporting process, as outlined for the trading portfolio.

The bulk of nontrading foreign exchange risk is related to unhedged structural foreign exchange exposure, mainly in our U.S., U.K. and China entities. Structural foreign exchange exposure arises from local capital (including retained earnings) held in the Group's consolidated subsidiaries and branches and from investments accounted for at equity. Change in foreign exchange rates of the underlying functional currencies are booked as Currency Translation Adjustments (CTA).

The primary objective for managing our structural foreign exchange exposure is to stabilize consolidated capital ratios from the effects of fluctuations in exchange rates. Therefore the exposure remains unhedged for a number of core currencies with considerable amounts of risk-weighted assets denominated in that currency in order to avoid volatility in the capital ratio for the specific entity and the Group as a whole.

Equity and investment risk

Nontrading equity risk arising predominantly from our non-consolidated investment holdings in the banking book and from our equity compensation plans.

Our non-consolidated investment holdings in the banking book are categorized into strategic and alternative investment assets. Strategic investments typically relate to acquisitions made to support our business franchise and are undertaken with a medium to long-term investment horizon. Alternative assets are comprised of principal investments and other non-strategic investment assets. Principal investments are direct investments in private equity (including leveraged buy-out fund commitments and equity bridge commitments), real estate (including mezzanine debt) and venture capital, undertaken for capital appreciation. In addition, principal investments are made in hedge funds and mutual funds in order to establish a track record for sale to external clients. Other non-strategic investment assets comprise assets recovered in the workout of distressed positions or other legacy investment assets in private equity and real estate of a non-strategic nature.

Pension risk

We are exposed to market risk from a number of defined benefit pension schemes for past and current employees. The ability of the pension schemes to meet the projected pension payments is maintained through investments and ongoing plan contributions. Market risk materializes due to a potential decline in the market value of the assets or an increase in the liability of each of the pension plans. Market Risk Management monitors and reports all market risks both on the asset and liability side of our defined benefit pension plans including interest rate risk, inflation risk, credit spread risk, equity risk and longevity risk. Overall, the Group seeks to minimize the impact of adverse market movements to key financial metric, with the primary objective on protecting the overall IFRS funded status, however in selected markets with the aim to balance competing key financial metrics. The investment managers manage the pension assets in line with investment mandates or guidelines as agreed with the pension plans' trustees and investment committees.

For key defined benefit plans for which the Bank aims to protect the IFRS funded status, the Group applies a liability driven investment (LDI) approach. Risks from mismatches between fluctuations in the present value of the defined benefit obligations and plan assets due to capital market movements are minimized, subject to balancing relevant trade-offs. For pension plans where the LDI approach may impact other key financial metrics adversely, the Group deviates from this primary investment strategy, most notably for the German main plan where the investment strategy for assets has been adjusted since 2015 by reducing the interest rate & credit spread hedges. The development of the impact of this investment strategy is being closely monitored and regularly reviewed.

For details on our defined benefit pension obligation see Note 35 “Employee Benefits” to the consolidated financial statements.

Other risks

Market risks in our Asset Management business primarily result from principal guaranteed funds or accounts, but also from co-investments in our funds.

Nontrading Market Risk Economic Capital

Nontrading market risk economic capital is calculated either by applying the standard traded market risk EC methodology or through the use of non-traded market risk models that are specific to each risk class and which consider, among other factors, historically observed market moves, the liquidity of each asset class, and changes in client’s behavior in relation to products with behavioral optionalities.

Operational risk management

Operational risk management framework

Operational risk means the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, and includes legal risk. Operational risk excludes business and reputational risk. It forms a subset of the bank’s non-financial risks, as does reputational risk.

The governance of our operational risks follows the bank’s Three Lines of Defence (3LoD) approach to manage all of its risks, financial and non-financial. The 3LoD approach aims to protect the bank, its customers and shareholders against risk losses and resulting reputational damages. It seeks to ensure that all our operational risks are identified and covered, that accountabilities regarding the management of operational risks are clearly assigned and risks are taken on and managed in the best and long term interest of the bank. The 3LoD approach and its underlying principles, i.e., the full accountability of the First Line of Defence (1st LoD) to manage its own risks and the existence of an independent Second Line of Defence (2nd LoD) to oversee and challenge risk taking and risk management within the bank’s defined risk appetite, apply to all levels of the organization including the Group-level, regions, countries, and legal entities.

Deutsche Bank’s operational risk appetite sets out the amount of operational risk we are willing to accept as a consequence of doing business. We take on operational risks consciously, both strategically as well as in day-to-day business. While the bank may have no appetite for certain types of operational risk failures (such as serious violations of laws or regulations and misconduct), in other cases a certain amount of operational risk must be accepted if the bank is to achieve its business objectives. In case a residual risk is assessed to be outside our risk appetite, further risk reducing actions must be undertaken, including to further remediate risks, insure risks or cease business.

Non-Financial Risk Management (NFRM) is the risk function for the non-financial risk types of the bank, including operational risk, and owns the overarching Operational Risk Management Framework (ORMF).

The ORMF is a set of interrelated tools and processes that are used to identify, assess, measure, monitor and remediate operational risks. Its components have been designed to operate together to provide a comprehensive approach to managing the bank's most material operational risks. ORMF components include the setup of the 1st and 2nd LoD as well as roles and responsibilities for the operational risk management process and appropriate independent challenge, the Group's approach to setting operational risk appetite and adhering to it, the operational risk type and control taxonomies, the minimum standards for operational risk management processes including tools, independent governance, and the bank's operational risk capital model.

The bank established and follows three OR governance standards including core roles and their respective mandates for the management of operational risks:

Operational risk governance standard I: NFRM owns the ORMF and determines the sufficient level of operational risk capital.

- As the 2nd LoD control function, NFRM defines the bank's approach to operational risk appetite and monitors its adherence, breaches and consequences. It is the independent reviewer and challenger of the 1st LoD's risk and control assessments and risk management activities. NFRM provides the oversight of risk and control mitigation plans to return the bank's operational risk to its risk appetite where required. It also establishes and regularly reports the bank's operational risk profile and top risks.
- As the subject matter expert for operational risk, NFRM provides independent risk views to facilitate forward looking management of operational risks, actively engages with risk owners and facilitates the implementation of risk management and control standards across the bank.
- NFRM is to ensure that sufficient capital is held to underpin the bank's operational risks. NFRM is accountable for the design, implementation and maintenance of the approach to determine the adequate level of capital required for operational risk for recommendation to the Management Board. This includes the calculation and allocation of operational risk capital demand and expected loss under the Advanced Measurement Approach (AMA).

Operational risk governance standard II: Risk owners as the 1st LoD have full accountability for their operational risks and manage these against a defined risk specific appetite.

Risk owners are those roles in the bank that generate risks, whether financial or non-financial. As heads of business divisions and infrastructure functions they must determine the appropriate organizational structure to identify their organizations' operational risk profile, implement risk management and control standards within their organization, take business decisions on the mitigation or acceptance of operational risks within the risk appetite and establish and maintain primary controls.

Operational risk governance standard III : Risk Type Controllers ("RTCs") act as the 2nd LoD control functions for operational risks.

RTCs establish the framework and define risk appetite statements for the specific operational risk type they control. They monitor the risk type's profile against risk appetite and exercise a veto on risk appetite breaches. RTCs define the risk management and control standards and independently oversee and challenge risk owners' implementation of these standards as well as their risk-taking and management activities. RTCs establish independent operational risk governance and prepare aggregated risk type profile reporting. As risk type experts, RTCs define the risk type and its taxonomy and support and facilitate the implementation of risk management standards and processes in the 1st LoD.

To maintain their independence, RTC roles are located only in infrastructure functions. Giving advice does not impact the independence of the RTC.

Organizational & governance structure

While the day-to-day management of operational risk is the primary responsibility of our business divisions and infrastructure functions as risk owners, NFRM oversees the Group-wide management of operational risks, identifies and reports risk concentrations, and promotes a consistent application of the ORMF across the bank. NFRM is part of the Group risk function which is headed by the Chief Risk Officer.

The Chief Risk Officer appoints the Head of NFRM who is accountable for the design, implementation and maintenance of an effective, efficient and regulatory compliant ORMF, including the operational risk capital model. The Head of NFRM monitors and challenges the ORMF's implementation and monitors overall risk levels against risk appetite.

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The Non-Financial Risk Committee (NFRC), which is co-chaired by the Chief Risk Officer and the Chief Regulatory Officer, is responsible for the oversight, governance and coordination of the management of operational risk in the Group on behalf of the Management Board by establishing a cross-risk and holistic perspective of the key operational risks of the Group. Its decision-making and policy related authorities include the review, advice and management of all operational risk issues which may impact the risk profile of our business divisions and infrastructure functions. Several sub-fora with attendees from both, the 1st and 2nd LoDs support the NFRC to effectively fulfil its mandate. In addition to the Group level NFRC, business divisions have established 1st LoD governance fora for the oversight and management of operational risks on various levels of the organization.

Managing our operational risk

In order to manage the broad range of risk types underlying operational risk, our ORMF provides a set of tools and processes (as described below, e.g. for loss data collection or the risk & control assessment) that apply to all operational risk types. These enable us to determine our operational risk profile in comparison to our risk appetite for operational risk, to systematically identify operational risk themes and concentrations, and to define risk mitigating measures and priorities.

In 2018, we enhanced the ORMF and the management of operational risks by focusing on the further simplification of our risk management processes, and by promoting an active and continuous dialogue between the 1st and 2nd LoDs with the objective to make the management of operational risks more transparent, meaningful and embedded in day-to-day business decisions:

Loss data collection: In a timely manner, we collect, categorize and analyze data on internal (with a P&L impact \geq €10.000) and relevant external operational risk events. Material events trigger clearly defined lessons learned and read-across analyses, which are performed in close collaboration between business partners, risk and infrastructure functions. Lessons learned reviews analyze the causes of significant operational risk events, identify their root causes, and document appropriate remediation actions to reduce the likelihood of their reoccurrence. Read across reviews take the conclusions of the lessons learned process and seek to analyze whether similar risks and control weaknesses identified in a lessons learned review exist in other areas of the bank, even if they have not yet resulted in problems. This allows preventative actions to be undertaken. The intensity of lessons learned and read across activities, the degree of embeddedness and collaboration between various functions working on these analyses has considerably

increased through 2018.

We complement our operational risk profile by using a set of scenarios including relevant external cases provided by a public database and additional internal scenarios. We thereby systematically utilize information on external loss events occurring in the banking industry to prevent similar incidents from happening to us, for example through particular deep dive analyses or risk profile reviews.

The Risk & Control Assessment process (RCA) comprises of a series of bottom-up assessments of the risks generated by businesses and infrastructure functions (1st LoDs), the effectiveness of the controls in place to manage them, and the remediation actions required to bring the outsized risks back into risk appetite. This enables both the 1st and 2nd LoDs to have a clear view of the bank's material operational risks. Through 2018, we finalized the implementation of a workshop based approach that fosters close interaction between various relevant parties and started a pilot to integrate various existing assessment processes in NFRM, Compliance and AFC to simplify the process and enhance efficiency. We further enhanced the bank's control inventory and introduced a NFR consequence management framework with a clear workflow and consequence types. The non-financial risk type taxonomy was updated with clearer definitions and supporting guidance.

We regularly report and perform analyses on our top risks. Top risks are rated in terms of both the likelihood that they could occur and the impact on the bank should they do so. The reporting provides a forward-looking perspective on the impact of planned remediation and control enhancements. It also contains emerging risks and themes that have the potential to evolve as a top risk in future. Top risk reduction programs comprise the most significant risk reduction activities that are key to bringing our operational top risk themes back within risk appetite. In 2018, the reporting of top risks has been enhanced using a strategic reporting tool.

NFR appetite metrics are used to monitor the operational risk profile, including against the bank's defined risk appetite, and to alert the organization to impending problems in a timely fashion. In 2018, a new NFR appetite approach was introduced, comprising enhanced metrics, an updated Group risk appetite monitor and a deeper embedding at divisional and business unit level.

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Operational risk type frameworks

The ORMF, which provides the overarching set of standards, tools and processes that apply to the management of all risk types underlying operational risk, is complemented by the operational risk type frameworks, risk management and control standards and tools set up by the respective risk type controllers for the operational risk types they control. These include the following with respect to the following risk types:

- The Compliance department performs an independent 2nd level control function that protects the bank's license to operate by promoting and enforcing compliance with the law and driving a culture of compliance and ethical conduct in the bank. The Compliance department assists the businesses and working with other infrastructure functions and regulators to establish and maintain a risk-based approach to the management of the bank's compliance risks in accordance with the bank's risk appetite and to help the bank detect, mitigate and prevent breaches of laws and regulations. The Compliance department performs the following principal activities: regulatory engagement and management collaborating with government & regulatory affairs; acting as a trusted advisor; and identifying, assessing, mitigating, monitoring and reporting on compliance risk. The results of these assessments are regularly reported to the Management Board and Supervisory Board.
- Financial crime risks are managed by our AFC function via maintenance and development of a dedicated

program. The AFC program is based on regulatory and supervisory requirements. AFC has defined roles and responsibilities and established dedicated functions for the identification and management of financial crime risks resulting from money laundering, terrorism financing, non-compliance with sanctions and embargoes as well as other criminal activities including fraud, bribery and corruption and other crimes. AFC assures further update of its strategy on financial crime prevention via regular development of internal policies processes and controls, institution-specific risk assessment and staff training.

- Legal (incl. group governance) is an infrastructure function, mandated to provide legal advice both to the Management Board as well as to the business divisions and infrastructure functions and to support the Management Board in setting up and guarding DB's governance framework and manage the bank's legal and governance risk. This includes in particular but without limitation:
 - Advising the Management Board and Supervisory Board on legal aspects of their activities
 - Advising all Deutsche Bank units on adherence to legal and regulatory requirements in relation to all activities
 - Managing Deutsche Bank Group's legal relations with third parties, or between Group entities
 - Supporting other units in managing Deutsche Bank Group's interactions with regulatory authorities
 - Engaging and managing external lawyers used by Deutsche Bank Group
 - Managing Deutsche Bank Group's litigation and contentious regulatory matters, (incl. contentious HR matters), and managing Deutsche Bank Group's response to external regulatory investigations
 - Advising on legal aspects of internal investigations
 - Setting the global governance framework for Deutsche Bank, facilitate its cross-unit application and assess the implementation
 - Developing and safeguarding efficient corporate governance structures suitable to support efficient decision-making, to align risk and accountability on the basis of clear and consistent roles and responsibilities
 - Maintaining Deutsche Bank Group's framework for policies and procedures and serve as guardian for Group policies and procedures
 - Ensuring appropriate quality assurance around all of the above

- NFRM RTC is risk type controller for a number of operational risks. Its mandate includes controls over transaction processing activities, as well as infrastructure risks to prevent technology or process disruption, maintain the confidentiality, integrity and availability of data, records and information security, and ensure businesses have robust plans in place to recover critical business processes and functions in the event of disruption from technical or building outage, or the effects of cyber-attack or natural disaster as well as any physical security or safety risk. NFRM RTC also manages the risks arising from the bank's internal and external vendor engagements via the provision of a comprehensive vendor risk management framework.

Measuring our operational risks

We calculate and measure the regulatory and economic capital requirements for operational risk using the AMA methodology. Our AMA capital calculation is based upon the loss distribution approach. Gross losses from historical internal and external loss data (Operational Riskdata eXchange Association consortium data) and external scenarios from a public database (IBM OpData) complemented by internal scenario data are used to estimate the risk profile (i.e., a loss frequency and a loss severity distribution). Our loss distribution approach model includes conservatism by recognizing losses on events that arise over multiple years as single events in our historical loss profile.

Within the loss distribution approach model, the frequency and severity distributions are combined in a Monte Carlo simulation to generate potential losses over a one year time horizon. Finally, the risk mitigating benefits of insurance are applied to each loss generated in the Monte Carlo simulation. Correlation and diversification benefits are applied to the net losses in a manner compatible with regulatory requirements to arrive at a net loss distribution at Group level,

covering expected and unexpected losses. Capital is then allocated to each of the business divisions after considering qualitative adjustments and expected loss.

The regulatory capital requirement for operational risk is derived from the 99.9 % percentile. Since Q4 2017, the economic capital is also set at 99.9 % percentile, see the section “Internal Capital Adequacy”. Both regulatory and economic capital requirements are calculated for a time horizon of one year.

The regulatory and economic capital demand calculations are performed on a quarterly basis. NFRM aims to ensure that for the approach for capital demand quantification appropriate development, validation and change governance processes are in place, whereby the validation is performed by an independent validation function and in line with the Group’s model risk management process.

Drivers for operational risk capital development

In 2018, our total operational risk losses further decreased but continued to be predominantly driven by losses and provisions arising from civil litigation and regulatory enforcement. Such losses still make up 67 % of operational risk losses and account for the majority of operational risk regulatory and economic capital demand, which is more heavily reliant on our long-term loss history. For a description of our current legal and regulatory proceedings, please see section “Current Individual Proceedings” in Note 29 “Provisions” to the consolidated financial statements. The operational risk losses from civil litigation and regulatory enforcement decreased by € 380 million or 67 % while our non-legal operational risk losses were € 86 million or 48 % lower compared to 2017.

In view of the relevance of legal risks within our operational risk profile, we dedicate specific attention to the management and measurement of our open civil litigation and regulatory enforcement matters where the bank relies both on information from internal as well as external data sources to consider developments in legal matters that affect the bank specifically but also the banking industry as a whole. Reflecting the multi-year nature of legal proceedings the measurement of these risks furthermore takes into account changing levels of certainty by capturing the risks at various stages throughout the lifecycle of a legal matter.

Conceptually, the bank measures operational risk including legal risk by determining the maximum loss that will not be exceeded with a given probability. This maximum loss amount includes a component that due to the IFRS criteria is reflected in our financial statements and a component that is expressed as regulatory or economic capital demand beyond the amount reflected as provisions within our financial statements.

The legal losses which the bank expects with a likelihood of more than 50 % are already reflected in our IFRS group financial statements. These losses include net changes in provisions for existing and new cases in a specific period where the loss is deemed probable and is reliably measurable in accordance with IAS 37. The development of our legal provisions for civil litigations and regulatory enforcement is outlined in detail in Note 29 “Provisions” to the consolidated financial statements.

Uncertain legal losses which are not reflected in our financial statements as provisions because they do not meet the recognition criteria under IAS 37 are expressed as “regulatory or economic capital demand”.

To quantify the litigation losses in the AMA model the bank takes into account historic losses, provisions, contingent liabilities and legal forecasts. Legal forecasts are generally comprised of ranges of potential losses from legal matters that are not deemed probable but are reasonably possible. Reasonably possible losses may result from ongoing and new legal matters which are reviewed at least quarterly by the attorneys handling the legal matters.

We include the legal forecasts in the “relevant loss data” used in our AMA model. Hereby the projection range of the legal forecasts is not restricted to the one year capital time horizon but goes beyond and conservatively assumes early

settlement of the underlying losses in the reporting period - thus considering the multi-year nature of legal matters.

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Liquidity Risk Management

Liquidity risk is the risk arising from our potential inability to meet all payment obligations when they come due or only being able to meet these obligations at excessive costs. The objective of the Group's liquidity risk management framework is to ensure that the Group can fulfill its payment obligations at all times and can manage liquidity and funding risks within its risk appetite. The framework considers relevant and significant drivers of liquidity risk, whether on-balance sheet or off-balance sheet.

Liquidity Risk Management framework

In accordance with the ECB's Supervisory Review and Evaluation Process (SREP), Deutsche Bank has implemented an annual Internal Liquidity Adequacy Assessment Process (ILAAP), which is reviewed and approved by the Management Board. The ILAAP provides comprehensive documentation of the Bank's Liquidity Risk Management framework, including: identifying the key liquidity and funding risks to which the Group is exposed; describing how these risks are identified, monitored and measured and describing the techniques and resources used to manage and mitigate these risks.

The Management Board defines the liquidity and funding risk strategy for the Bank, as well as the risk appetite, based on recommendations made by the Group Risk Committee (GRC). At least annually the Management Board reviews and approves the risk appetite which is applied to the Group to measure and control liquidity risk as well as our long-term funding and issuance plan.

Treasury is mandated to manage the overall liquidity and funding position of the Bank, with Liquidity Risk Management (LRM) acting as an independent control function, responsible for reviewing the liquidity risk framework, proposing the risk appetite to GRC and the validation of Liquidity Risk models which are developed by Treasury, to measure and manage the Group's liquidity risk profile.

Treasury manages liquidity and funding, in accordance with the Management Board-approved risk appetite across a range of relevant metrics, and implements a number of tools to monitor these and ensure compliance. In addition, Treasury works closely in conjunction with LRM and the business, to analyze and understand the underlying liquidity characteristics of the business portfolios. These parties are engaged in regular and frequent dialogue to understand changes in the Bank's position arising from business activities and market circumstances. Dedicated business targets are allocated to ensure the Group operates within its overall liquidity and funding appetite.

The Management Board is informed of performance against the risk appetite metrics, via a weekly Liquidity Dashboard. As part of the annual strategic planning process, we project the development of the key liquidity and funding metrics based on the underlying business plans to ensure that the plan is in compliance with our risk appetite.

Capital Markets Issuance

Deutsche Bank has a wide range of funding sources, including retail and institutional deposits, unsecured and secured wholesale funding and debt issuance in the capital markets. Debt issuance, encompassing senior unsecured bonds, covered bonds as well as capital securities, is a key source of term funding for the Bank and is managed directly by Treasury. At least once a year Treasury submits an annual long-term Funding Plan to the GRC for recommendation and then to the Management Board for approval. This plan is driven by global and local funding and liquidity requirements based on expected business development. Our capital markets issuance portfolio is dynamically

managed through our yearly issuance plans to avoid excessive maturity concentrations.

Short-term liquidity and wholesale funding

Deutsche Bank tracks all contractual cash flows from wholesale funding sources, on a daily basis, over a 12-month horizon. For this purpose, we consider wholesale funding to include unsecured liabilities raised primarily by Treasury Pool Management, as well as secured liabilities raised by our Corporate & Investment Bank Division. Our wholesale funding counterparties typically include corporates, banks and other financial institutions, governments and sovereigns.

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The Group has implemented a set of Management Board-approved limits to restrict the Bank's exposure to wholesale counterparties, which have historically shown to be the most susceptible to market stress. The wholesale funding limits are monitored daily, and apply to the total combined currency amount of all wholesale funding currently outstanding, both secured and unsecured with specific tenor limits covering the first 8 weeks. Our Liquidity Reserves are the primary mitigant against potential stress in the short-term.

The tables in section "Liquidity Risk Exposure: Funding Diversification" show the contractual maturity of our short-term wholesale funding and capital markets issuance.

Liquidity stress testing and scenario analysis

Global liquidity stress testing and scenario analysis is one of the key tools for measuring liquidity risk and evaluating the Group's short-term liquidity position within the liquidity framework. It complements the daily operational cash management process. The long-term liquidity strategy based on contractual and behavioral modelled cash flow information is represented by the Funding Matrix.

Our global liquidity stress testing process is managed by Treasury in accordance with the Management Board approved risk appetite. Treasury is responsible for the design of the overall methodology, the choice of liquidity risk drivers and the determination of appropriate assumptions (parameters) to translate input data into model results. Liquidity Risk Management is responsible for the definition of the stress scenarios and the independent validation of liquidity risk models. Liquidity and Treasury Reporting & Analysis (LTRA) is responsible for implementing these methodologies in conjunction with Treasury, LRM and IT as well as for the stress test calculation.

We use stress testing and scenario analysis to evaluate the impact of sudden and severe stress events on our liquidity position. The scenarios we apply are based on systemic historic events, such as the 2008 financial markets crisis as well as idiosyncratic events.

Deutsche Bank has selected four scenarios to calculate the Group's stressed Net Liquidity Position ("sNLP"). These scenarios capture the historical experience of Deutsche Bank during periods of idiosyncratic and/or market-wide stress and are assumed to be both plausible and sufficiently severe as to materially impact the Group's liquidity position. A global market crisis, for example, is covered by a specific stress scenario (systemic market risk) that models the potential consequences observed during the financial crisis of 2008. Additionally, we have introduced regional market stress scenarios. Under each of the scenarios we assume a high degree of maturing loans to non-wholesale customers is rolled-over, to support our business franchise. Wholesale funding, from the most risk sensitive counterparties (including banks and money-market mutual funds) is assumed to roll-off at contractual maturity or even be bought back, in the acute phase of the stress.

In addition, we include the potential funding requirements from contingent liquidity risks which might arise, including credit facilities, increased collateral requirements under derivative agreements, and outflows from deposits with a contractual rating linked trigger.

We then model the actions we would take to counterbalance the outflows incurred. Countermeasures include utilizing the Liquidity Reserve and generating liquidity from unencumbered, marketable assets.

Stress testing is conducted at a global level and for defined individual legal entities. In addition to the consolidated currency stress test, stress tests for material currencies (EUR, USD and GBP) are performed. We review our stress-testing assumptions on a regular basis and have made further enhancements to the methodology and severity of certain parameters through the course of 2018.

On a daily basis, we run the liquidity stress test over an eight-week horizon, which we consider the most critical time span in a liquidity crisis, and apply the relevant stress assumptions to risk drivers from on-balance sheet and off-balance sheet products. Beyond the eight week time horizon, we analyze the impact of a more prolonged stress period, extending to twelve months. This stress testing analysis is performed on a daily basis.

The risk appetite to maintain a surplus of at least € 10 billion throughout the 8 week stress horizon under all scenarios for our daily consolidated currency stress test remained at this level also for 2018.

The tables in section “Liquidity Risk Exposure: Stress Testing and Scenario Analysis” show the results of our internal global liquidity stress test under the various different scenarios.

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Liquidity Coverage Ratio

In addition to our internal stress test result, the Group has a Management Board-approved risk appetite for the Liquidity Coverage Ratio (LCR). The LCR is intended to promote the short-term resilience of a bank’s liquidity risk profile over a 30 day stress scenario. The ratio is defined as the amount of High Quality Liquid Assets (HQLA) that could be used to raise liquidity in a stressed scenario, measured against the total volume of net cash outflows, arising from both contractual and modelled exposures.

This requirement has been implemented into European law, via the Commission Delegated Regulation (EU) 2015/61, adopted in October 2014. Compliance with the LCR was required in the EU from October 1, 2015.

The LCR complements the internal stress testing framework. By maintaining a ratio in excess of minimum regulatory requirements, the LCR seeks to ensure that the Group holds adequate liquidity resources to mitigate a short-term liquidity stress.

In November 2018, the Bank has set its internal risk appetite more conservative by 3% in order to maintain a LCR ratio of at least 113%, effective from 1st of January 2019 onwards.

Key differences between the internal liquidity stress test and LCR include the time horizon (eight weeks versus 30 days), classification and haircut differences between Liquidity Reserves and the LCR HQLA, outflow rates for various categories of funding, and inflow assumption for various assets (for example, loan repayments). Our liquidity stress test also includes outflows related to intraday liquidity assumptions, which are not explicitly captured in the LCR.

Funding Risk Management

Structural funding

Deutsche Bank's primary tool for monitoring and managing longer term funding risk is the Funding Matrix. The Funding Matrix assesses the Group's structural funding profile for the greater than one year time horizon. To produce the Funding Matrix, all funding-relevant assets and liabilities are mapped into time buckets corresponding to their contractual or modeled maturities. This allows the Group to identify expected excesses and shortfalls in term liabilities over assets in each time bucket, facilitating the management of potential liquidity exposures.

The liquidity profile is based on contractual cash flow information. If the contractual maturity profile of a product does not adequately reflect the liquidity profile, it is replaced by modeling assumptions. Short-term balance sheet items (<1yr) or matched funded structures (asset and liabilities directly matched with no liquidity risk) can be excluded from the term analysis.

The bottom-up assessment by individual business line is combined with a top-down reconciliation against the Group's IFRS balance sheet. From the cumulative term profile of assets and liabilities beyond 1 year, long-funded surpluses or short-funded gaps in the Group's maturity structure can be identified. The cumulative profile is thereby built up starting from the greater than 10 year bucket down to the greater than 1 year bucket.

The strategic liquidity planning process, which incorporates the development of funding supply and demand across business units, together with the bank's targeted key liquidity and funding metrics, provides the key input parameter for our annual capital markets issuance plan. Upon approval by the Management Board the capital markets issuance plan establishes issuance targets for securities by tenor, volume, currency and instrument. We also maintain a stand-alone U.S. dollar and GBP funding matrix which limits the maximum short position in any time bucket (more than 1 year to more than 10 years) to € 10 billion and € 5 billion respectively. This supplements the risk appetite for our global funding matrix which requires us to maintain a positive funding position in any time bucket (more than 1 year to more than 10 years).

Net Stable Funding Ratio

The Net Stable Funding Ratio (NSFR) was proposed as part of Basel 3, as the regulatory metric for assessing a bank's structural funding profile. The NSFR is intended to reduce medium to long-term funding risks by requiring banks to maintain a stable funding profile in relation to their on- and off-balance sheet activities. The ratio is defined as the amount of Available Stable Funding (the portion of capital and liabilities expected to be a stable source of funding), relative to the amount of Required Stable Funding (a function of the liquidity characteristics of various assets held).

In the EU, the Commission published a legislative proposal to amend the CRR. The proposal defines, inter alia, a mandatory quantitative NSFR requirement which would apply two years after the proposal comes into force. The proposal remains subject to change in the EU legislative process. Therefore, for banks domiciled in the EU, the final definition of the ratio and associated implementation timeframe has not yet been confirmed.

We are currently in the process of assessing the impacts of the NSFR, and would expect to formally embed this metric within our overall liquidity risk management framework, once the relevant rules and timing within the EU have been finally determined.

Funding Diversification

Diversification of our funding profile in terms of investor types, regions, products and instruments is an important element of our liquidity risk management framework. Our most stable funding sources come from capital markets and equity, retail, and transaction banking clients. Other customer deposits and secured funding and short positions are additional sources of funding. Unsecured wholesale funding represents unsecured wholesale liabilities sourced primarily by our Treasury Pool Management. Given the relatively short-term nature of these liabilities, they are primarily used to fund liquid trading assets.

To promote the additional diversification of our refinancing activities, we hold a license allowing us to issue mortgage Pfandbriefe. In addition, we have established a program for the purpose of issuing Covered Bonds under Spanish law (Cedulas).

Unsecured wholesale funding comprises a range of unsecured products, such as Certificates of Deposit (CDs), Commercial Papers (CPs) as well as term, call and overnight deposits across tenors primarily up to one year.

To avoid any unwanted reliance on these short-term funding sources, and to promote a sound funding profile, which complies with the defined risk appetite, we have implemented limits (across tenors) on these funding sources, which are derived from our daily stress testing analysis. In addition, we limit the total volume of unsecured wholesale funding to manage the reliance on this funding source as part of the overall funding diversification.

The chart “Liquidity Risk Exposure: Funding Diversification” shows the composition of our external funding sources that contribute to the liquidity risk position, both in EUR billion and as a percentage of our total external funding sources.

Funds Transfer Pricing

The funds transfer pricing framework applies to all businesses/regions and promotes pricing of (i) assets in accordance with their underlying liquidity risk, (ii) liabilities in accordance with their liquidity value and funding maturity and (iii) contingent liquidity exposures in accordance with the cost of providing for commensurate liquidity reserves to fund unexpected cash requirements.

Within this framework all funding and liquidity risk costs and benefits are allocated to the firm’s business units based on market rates. Those market rates reflect the economic costs of liquidity for Deutsche Bank. Treasury might set further financial incentives in line with the Bank’s liquidity risk guidelines. While the framework promotes a diligent group-wide allocation of the Bank's funding costs to the liquidity users, it also provides an incentive-based framework for businesses generating stable long-term and stress compliant funding. Funding relevant transactions are subject to liquidity (term) premiums and/or other funds transfer pricing mechanisms depending on market conditions. Liquidity premiums are set by Treasury and reflected in a segregated Treasury liquidity account which is the aggregator of liquidity costs and benefits. The management and allocation of the liquidity account cost base is the key variable for funds transfer pricing within Deutsche Bank.

Liquidity reserves

Liquidity reserves comprise available cash and cash equivalents, highly liquid securities (includes government, agency and government guaranteed) as well as other unencumbered central bank eligible assets.

The volume of our liquidity reserves is a function of our expected daily stress result, both at an aggregate level as well as at an individual currency level. To the extent we receive incremental short-term wholesale liabilities which attract a high stress roll-off, we will largely keep the proceeds of such liabilities in cash or highly liquid securities as a stress mitigant. Accordingly, the total volume of our liquidity reserves will fluctuate as a function of the level of short-term wholesale liabilities held, although this has no material impact on our overall liquidity position under stress. Our liquidity reserves include only assets that are freely transferable or that can be utilized after taking into consideration local liquidity demands within the Group, including local limits on free transferability within the Group, or that can be applied against local entity stress outflows. As a result our liquidity reserves exclude surplus liquidity held in DBTCA due to requirements pursuant to Section 23A of the U.S. Federal Reserve Act. Certain intraday requirements are directly deducted in the calculation of the Liquidity Reserves while others are represented as outflows in our internal liquidity model. We hold the vast majority of our liquidity reserves centrally across the major currencies, at our parent and our foreign branches with further reserves held at key locations in which we are active.

Asset Encumbrance

Encumbered assets primarily comprise those on- and off-balance sheet assets that are pledged as collateral against secured funding, collateral swaps, and other collateralized obligations. We generally encumber loans to support long-term capital markets secured issuance such as covered bonds or other self-securitization structures, while financing debt and equity inventory on a secured basis is a regular activity for our Corporate & Investment Bank business. Additionally, in line with the EBA technical standards on regulatory asset encumbrance reporting, we consider as encumbered assets pledged with settlement systems, including default funds and initial margins, as well as other assets pledged which cannot be freely withdrawn such as mandatory minimum reserves at central banks. We also include derivative margin receivable assets as encumbered under these EBA guidelines.

Business (Strategic) Risk Management

Strategic Risk is the risk of suffering an operating income shortfall due to lower than expected performance in revenues not compensated by a reduction in costs. Strategic Risk may arise from changes to the competitive landscape or regulatory framework or ineffective positioning in the macroeconomic environment. Strategic Risk could also arise due to a failure to execute strategy and/ or failure to effectively take actions to address underperformance.

A Strategic and Capital plan is developed annually and presented to the Management Board for discussion and approval. The final plan is then presented to the Supervisory Board. During the year, execution of business strategies is regularly monitored to assess the performance against strategic objectives and to seek to ensure we remain on track to achieve targets. A more comprehensive description of this process is detailed in the section ‘Strategic and Capital Plan’.

Model Risk Management

Model risk is the potential for adverse consequences from incorrect or misused model outputs and reports using these outputs. Model risk can lead to financial loss, poor business or strategic decision making, or damage our reputation. The term ‘model’ refers to a quantitative method, system, or approach that applies statistical, economic, financial, or mathematical theories, techniques, and assumptions to process input data into quantitative estimates.

Model risk is managed across Pricing models, Risk & Capital models, and Other models:

- Pricing models are used to generate asset and liability fair value measurements reported in official books and records and/or risk sensitivities which feed Market Risk Management (MRM) processes;
- Risk & Capital models are related to risks used for regulatory or internal capital requirements, e.g. VaR, IMM, Stress tests etc.;
- Other models are those outside of the Bank's Pricing and Risk & Capital models.

Model risk appetite is aligned to the Group's qualitative statements, ensuring that model risk management is embedded in a strong risk culture and that risks are minimized to the extent possible.

The management of model risk includes:

- Performing robust independent model validation that provides effective challenge to the model development process and includes identification of conditions for use, methodological limitations that may require adjustments or overlays, and validation findings that require remediation;
- Establishing a strong model risk management and governance framework, including senior forums for monitoring and escalation of model risk related topics;
- Creating Bank-wide model risk related policies, aligned to regulatory requirements with clear roles and responsibilities for key stakeholders across the model life cycle; and
- Providing an assessment of the model risk control environment and reporting to the Management Board on a periodic basis.

We have been implementing improvements in our model risk management framework, and significant progress has been achieved in 2018 across the three underlying model categories, including:

- Continued progress in improving the control environment for Pricing Models over 2018, as reflected in significant reductions in model usage exceptions and control of trades on non-strategic platforms within tolerance
- Identification and inclusion of 'Other Models' within a Model Inventory that completed a transparent baseline of all Model categories, from which model risk can be measured, managed and monitored at Group level in 2019 and beyond
- Key controls continue to operate across Risk & Capital Models, with introduction of compensating control framework for validation issues and prioritized focus on remediation of certain issues.

Management has determined to instil a robust and consistent model risk management framework in order to ensure that the framework effectively identifies, monitors and measures risk. The effort focuses on board oversight, model identification and model inventory, single coherent policy and governance framework, model development practices, and effective and rigorous model validation.

Reputational Risk Management

Within our risk management process, we define reputational risk as the risk of possible damage to our brand and reputation, and the associated risk to earnings, capital or liquidity, arising from any association, action or inaction which could be perceived by stakeholders to be inappropriate, unethical or inconsistent with Deutsche Bank's values and beliefs.

The Reputational Risk Framework (the Framework) is in place to manage primary reputational risk. It covers the process through which active decisions are taken on matters which may pose a reputational risk, ex ante, and, in doing so, prevent damage to Deutsche Bank's reputation wherever possible. Reputational risks which may arise from a

failure with another risk type, control or process (secondary reputational risk) are addressed separately via the associated risk type framework. The Framework is established to provide consistent standards for the identification, assessment and management of reputational risk issues. While every employee has a responsibility to protect our reputation, the primary responsibility for the identification, assessment, management, monitoring and, if necessary, referring or reporting, of reputational risk matters lies with our business divisions. Each employee is under an obligation, within the scope of his or her activities, to be alert to any potential causes of reputational risk and to address them according to the Framework. Reputational Risk Management has designed and implemented a look back and lessons learned process in order to assess and control the effectiveness of the Framework, including in relation to reputational risk identification and referral.

If a matter is identified that is considered to pose, at a minimum, a moderate reputational risk then it is required to be referred for further consideration within the business division through its Unit Reputational Risk Assessment Process (Unit RRAP). In the event that a matter is deemed to pose a material reputational risk then it must be referred through to one of the four Regional Reputational Risk Committees (RRRCs) for further review. In addition to the materiality assessment, there are also certain criteria, known as mandatory referral criteria, which are considered inherently higher risk from a reputational perspective and therefore require mandatory referral to defined Subject Matter Experts (SMEs), e.g. Industry Reputational Risk or Group Sustainability, and/or referral to a Unit RRAP or RRRC.

The RRRCs are sub-committees of the Group Reputational Risk Committee (GRRC), which is itself a sub-committee of the Group Risk Committee (GRC), and are responsible for the oversight, governance and coordination of the management of reputational risk in their respective regions of Deutsche Bank on behalf of the Management Board. In exceptional circumstances, matters can also be referred by the RRRCs to the GRRC.

The modelling and quantitative measurement of reputational risk internal capital is implicitly covered in our economic capital framework primarily within operational and strategic risk.

Risk Concentration and Risk Diversification

Risk Concentrations

Risk concentrations refer to clusters of the same or similar risk drivers within specific risk types (intra-risk concentrations in credit, market, operational, liquidity and business risks) as well as across different risk types (inter-risk concentrations). They occur within and across counterparties, businesses, regions/countries, industries and products. The management and monitoring of risk concentrations is achieved through a quantitative and qualitative approach, as follows:

- Intra-risk concentrations are assessed, monitored and mitigated by the individual risk functions (credit, market, operational, liquidity and strategic risk management). This is supported by limit setting on different levels and/or management according to risk type.
- Inter-risk concentrations are managed through quantitative top-down stress-testing and qualitative bottom-up reviews, identifying and assessing risk themes independent of any risk type and providing a holistic view across the bank.

The most senior governance body for the oversight of risk concentrations throughout 2018 was the Enterprise Risk Committee (ERC), which is a subcommittee of the Group Risk Committee (GRC).

Risk Type Diversification Benefit

The risk type diversification benefit quantifies diversification effects between credit, market, operational and strategic risk in the economic capital calculation. To the extent correlations between these risk types fall below 1.0, a risk type

diversification benefit results. The calculation of the risk type diversification benefit is intended to ensure that the standalone economic capital figures for the individual risk types are aggregated in an economically meaningful way.

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Risk and capital performance

Capital, Leverage Ratio and MREL

Regulatory capital

The calculation of our regulatory capital incorporates the capital requirements following the “Regulation (EU) No 575/2013 on prudential requirements for credit institutions and investment firms” (Capital Requirements Regulation or “CRR”) and the “Directive 2013/36/EU on access to the activity of credit institutions and the prudential supervision of credit institutions and investment firms” (Capital Requirements Directive 4 or “CRD 4”) as implemented into German law. The information in this section as well as in the section “Development of risk-weighted Assets” is based on the regulatory principles of consolidation.

This section refers to the capital adequacy of the group of entities consolidated for banking regulatory purposes pursuant to the CRR and the German Banking Act (“Kreditwesengesetz” or “KWG”). Therein not included are insurance companies or companies outside the finance sector.

The total regulatory capital pursuant to the effective regulations as of year-end 2018 comprises Tier 1 and Tier 2 (T2) capital. Tier 1 capital is subdivided into Common Equity Tier 1 (CET 1) capital and Additional Tier 1 (AT1) capital.

Common Equity Tier 1 (CET 1) capital consists primarily of common share capital (reduced by own holdings) including related share premium accounts, retained earnings (including losses for the financial year, if any) and accumulated other comprehensive income, subject to regulatory adjustments (i.e. prudential filters and deductions). Prudential filters for CET 1 capital, according to Articles 32 to 35 CRR, include (i) securitization gains on sale, (ii) cash flow hedges and changes in the value of own liabilities, and (iii) additional value adjustments. CET 1 capital deductions comprise (i) intangible assets, (ii) deferred tax assets that rely on future profitability, (iii) negative amounts resulting from the calculation of expected loss amounts, (iv) net defined benefit pension fund assets, (v) reciprocal cross holdings in the capital of financial sector entities and, (vi) significant and non-significant investments in the capital (CET 1, AT1, T2) of financial sector entities above certain thresholds. All items not deducted (i.e., amounts below the threshold) are subject to risk-weighting.

Additional Tier 1 (AT1) capital consists of AT1 capital instruments and related share premium accounts as well as noncontrolling interests qualifying for inclusion in consolidated AT1 capital, and during the transitional period grandfathered instruments eligible under earlier frameworks. To qualify as AT1 capital under CRR/CRD 4, instruments must have principal loss absorption through a conversion to common shares or a write-down mechanism allocating losses at a trigger point and must also meet further requirements (perpetual with no incentive to redeem; institution must have full dividend/coupon discretion at all times, etc.).

Tier 2 (T2) capital comprises eligible capital instruments, the related share premium accounts and subordinated long-term debt, certain loan loss provisions and noncontrolling interests that qualify for inclusion in consolidated T2 capital. To qualify as T2 capital, capital instruments or subordinated debt must have an original maturity of at least five years. Moreover, eligible capital instruments may inter alia not contain an incentive to redeem, a right of investors to accelerate repayment, or a credit sensitive dividend feature.

Capital instruments that no longer qualify as AT1 or T2 capital under the CRR/CRD 4 fully loaded rules are subject to grandfathering rules during the transitional period and are phased out from 2013 to 2022 with their recognition capped at 40 % in 2018 and the cap decreasing by 10 % every year.

Capital instruments

Our Management Board received approval from the 2017 Annual General Meeting to buy back up to 206.7 million shares before the end of April 2022. Thereof 103.3 million shares can be purchased by using derivatives, this includes 41.3 million derivatives with a maturity exceeding 18 months. During the period from the 2017 Annual General Meeting until the 2018 Annual General Meeting (May 24, 2018), 22.8 million shares have been purchased, of which 4.4 million shares through exercise of call options. The shares purchased were used for equity compensation purposes in the same period or are to be used in the upcoming period so that the number of shares held in Treasury from buybacks was 1.3 million as of the 2018 Annual General Meeting.

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The 2018 Annual General Meeting granted our Management Board the approval to buy back up to 206.7 million shares before the end of April 2023. Thereof 103.3 million shares can be purchased by using derivatives, this includes 41.3 million derivatives with a maturity exceeding 18 months. These authorizations substitute the authorizations of the previous year. During the period from the 2018 Annual General Meeting until December 31, 2018, 9.3 million shares were purchased. The shares purchased are to be used in the upcoming period so that the number of shares held in Treasury from buybacks was 1.2 million as of December 31, 2018.

Since the 2017 Annual General Meeting, and as of December 31, 2018, authorized capital available to the Management Board is € 2,560 million (1,000 million shares). As of December 31, 2018, the conditional capital against cash stands at € 512 million (200 million shares). Additional conditional capital for equity compensation amounts to € 51.2 million (20 million shares). Further the 2018 Annual General Meeting authorized the issuance of participatory notes and other Hybrid Debt Securities that fulfill the regulatory requirements to qualify as Additional Tier 1 capital with an equivalent value of € 8.0 billion.

Our legacy Hybrid Tier 1 capital instruments (substantially all noncumulative trust preferred securities) are not recognized under fully loaded CRR/CRD 4 rules as Additional Tier 1 capital, mainly because they have no write-down or equity conversion feature. However, they are recognized as Additional Tier 1 capital under CRR/CRD 4 transitional provisions and can still be recognized as Tier 2 capital under the fully loaded CRR/CRD 4 rules. During the transitional phase-out period the maximum recognizable amount of Additional Tier 1 instruments from Basel 2.5 compliant issuances as of December 31, 2012 will be reduced at the beginning of each financial year by 10 % or € 1.3 billion, through 2022. For December 31, 2018, this resulted in eligible Additional Tier 1 instruments of € 7.6 billion (i.e. € 4.6 billion newly issued AT1 Notes plus € 3.0 billion of legacy Hybrid Tier 1 instruments recognizable during the transition period). € 3.0 billion of the legacy Hybrid Tier 1 instruments can still be recognized as Tier 2 capital under the fully loaded CRR/CRD 4 rules. Additional Tier 1 instruments recognized under fully loaded CRR/CRD 4 rules amounted to € 4.6 billion as of December 31, 2018. In 2018, the bank has redeemed one legacy Hybrid Tier 1 instrument with a notional of U.S. \$ 2.0 billion and an eligible equivalent amount of € 1.6 billion and another legacy Hybrid Tier 1 instrument with a notional of € 1.0 billion and an eligible equivalent amount of € 1.0 billion. The first redemption was already derecognized from regulatory Additional Tier 1 capital in 2017 with the effective date of the call-permission by the ECB.

The total of our Tier 2 capital instruments as of December 31, 2018 recognized during the transition period under CRR/CRD 4 was € 6.2 billion. As of December 31, 2018, there were no legacy Hybrid Tier 1 instruments that are counted as Tier 2 capital under transitional rules. The gross notional value of the Tier 2 capital instruments was € 7.5 billion. Tier 2 instruments recognized under fully loaded CRR/CRD 4 rules amounted to € 9.2 billion as of

December 31, 2018 (including the € 3.0 billion legacy Hybrid Tier 1 capital instruments only recognizable as Additional Tier 1 capital during the transitional period). In 2018, the bank has redeemed one Tier 2 capital instrument with a notional of JPY 21.0 billion and an eligible equivalent amount of € 0.1 billion and another Tier 2 capital instrument with a notional of JPY 3.0 billion and an eligible equivalent amount of € 0.0 billion. These redemptions were already derecognized from regulatory Tier 2 capital in 2017 with the effective date of the call-permission by the ECB.

Minimum capital requirements and additional capital buffers

The Pillar 1 CET 1 minimum capital requirement applicable to the Group is 4.50 % of risk-weighted assets (RWA). The Pillar 1 total capital requirement of 8.00 % demands further resources that may be met with up to 1.50 % Additional Tier 1 capital and up to 2.00 % Tier 2 capital.

Failure to meet minimum capital requirements can result in supervisory measures such as restrictions of profit distributions or limitations on certain businesses such as lending. We complied with the regulatory capital adequacy requirements in 2018.

In addition to these minimum capital requirements, the following combined capital buffer requirements have been phased in since 2016 (other than the systemic risk buffer, if any, which is not subject to any phase-in) and will become fully effective from 2019 onwards. The buffer requirements must be met in addition to the Pillar 1 minimum capital requirements, but can be drawn down in times of economic stress.

Deutsche Bank continues to be designated as a global systemically important institution (G-SII) by the German Federal Financial Supervisory Authority (BaFin) in agreement with the Deutsche Bundesbank, resulting in a G-SII buffer requirement of 2.00 % CET 1 capital of RWA in 2019 and was phased in with 0.5 % in 2016, 1.00 % in 2017 and 1.50 % in 2018. This is in line with the FSB assessment of systemic importance based on the indicators as published in 2018. We will continue to publish our indicators on our website.

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The capital conservation buffer is implemented in Section 10c German Banking Act based on Article 129 CRD 4 and equals a requirement of 2.50 % CET 1 capital of RWA in 2019 and was phased in with 0.625 % in 2016, 1.25 % in 2017 and 1.875 % in 2018.

The countercyclical capital buffer is deployed in a jurisdiction when excess credit growth is associated with an increase in system-wide risk. It may vary between 0 % and 2.50 % CET 1 capital of RWA by 2019. In exceptional cases, it could also be higher than 2.50 %. The institution specific countercyclical buffer that applies to Deutsche Bank is the weighted average of the countercyclical capital buffers that apply in the jurisdictions where our relevant credit exposures are located. As per December 31, 2018, the institution-specific countercyclical capital buffer was at 0.07 %.

In addition to the aforementioned buffers, national authorities, such as the BaFin, may require a systemic risk buffer to prevent and mitigate long-term non-cyclical systemic or macro-prudential risks that are not covered by the CRR. They can require an additional buffer of up to 5.00 % CET 1 capital of RWA. As of the year-end 2018, no systemic risk buffer applied to Deutsche Bank.

Additionally, Deutsche Bank AG has been classified by BaFin as an other systemically important institution (O-SII) with an additional buffer requirement of 2.00 % that has to be met on a consolidated level. For Deutsche Bank, the O-SII buffer was introduced in first steps of 0.66 % in 2017, 1.32 % in 2018 and 2.00 % in 2019. Unless certain exceptions apply, only the higher of the systemic risk buffer (as of December 31, 2018, not applicable), G-SII buffer and O-SII buffer must be applied. Accordingly, the O-SII buffer is not applicable as of December 31, 2018.

In addition, pursuant to the Pillar 2 Supervisory Review and Evaluation Process (SREP), the European Central Bank (ECB) may impose capital requirements on individual banks which are more stringent than statutory requirements (so-called Pillar 2 requirement). On December 19, 2017, Deutsche Bank was informed by the ECB of its decision regarding prudential minimum capital requirements for 2018, following the results of the 2017 SREP. Beginning from January 1, 2018, the decision requires Deutsche Bank to maintain a phase-in CET 1 ratio, which as of December 31, 2018 is at least 10.69 % on a consolidated basis. This requirement on CET 1 capital comprises the Pillar 1 minimum capital requirement of 4.50 %, the Pillar 2 requirement (SREP Add-on) of 2.75 %, the phase-in capital conservation buffer of 1.875 %, the countercyclical buffer of 0.07 % (as per December 31, 2018) and the phase-in G-SII capital buffer of 1.50 %. Correspondingly the requirements for Deutsche Bank's Tier 1 capital ratio were at 12.19 % and total capital ratio at 14.19 % as of December 31, 2018.

Beginning from January 1, 2019, Deutsche Bank must maintain a CET 1 ratio of at least 11.82 % on a consolidated basis as the transition period for the capital conservation buffer and the G-SII capital buffer requirements ended and the full buffer levels of 2.50 % and 2.00 %, respectively, need to be covered with CET 1 capital. To summarize, the CET 1 capital requirement comprises the Pillar 1 minimum capital requirement of 4.50 %, the unchanged Pillar 2 requirement (SREP Add-on) of 2.75 %, the capital conservation buffer of 2.50 %, the countercyclical buffer (0.07 % per year end 2018) and the G-SII buffer of 2.00 %. Correspondingly, 2019 requirements for Deutsche Bank's Tier 1 capital ratio are at 13.32 % and for its total capital ratio at 15.32 %. On February 8, 2019, Deutsche Bank was informed by the ECB of its decision regarding prudential minimum capital requirements for 2019, following the results of the 2018 SREP. The decision left Deutsche Bank's Pillar 2 requirement and thus the CET 1 capital requirements unchanged at 2.75 % beginning from March 1, 2019. Also, the ECB communicated to us an individual expectation to hold a further Pillar 2 CET 1 capital add-on, commonly referred to as the Pillar 2 guidance. The capital add-on pursuant to the Pillar 2 guidance is separate from and in addition to the Pillar 2 requirement. The ECB has stated that it expects banks to meet the Pillar 2 guidance although it is not legally binding, and failure to meet the Pillar 2 guidance does not lead to automatic restrictions of capital distributions.

The following table gives an overview of the different Pillar 1 and Pillar 2 minimum capital requirements (but excluding the Pillar 2 guidance) as well as capital buffer requirements applicable to Deutsche Bank in the years 2018 and 2019 (articulated on a phase-in basis):

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Overview total capital requirements and capital buffers

	2018	2019
Pillar 1		
Minimum CET 1 requirement	4.50 %	4.50 %
Combined buffer requirement	3.44 %	4.57 %
Capital Conservation Buffer	1.875 %	2.50 %
Countercyclical Buffer	0.07 % ¹	0.07 % ¹
Maximum of:	1.50 %	2.00 %
G-SII Buffer	1.50 %	2.00 %
O-SII Buffer	1.32 %	2.00 %
Systemic Risk Buffer	0.00 %	0.00 % ²
Pillar 2		
Pillar 2 SREP Add-on of CET 1 capital (excluding the "Pillar 2" guidance)	2.75 %	2.75 %
Total CET 1 requirement from Pillar 1 and 2 ³	10.69 %	11.82 %

Total Tier 1 requirement from Pillar 1 and 2	12.19 %	13.32 %
Total capital requirement from Pillar 1 and 2	14.19 %	15.32 %

1 Deutsche Bank's countercyclical buffer requirement is subject to country-specific buffer rates decreed by EBA and the Basel Committee of Banking Supervision (BCBS) as well as Deutsche Bank's relevant credit exposures as per respective reporting date. The countercyclical buffer rate for 2018 is as of December 31, 2018. The countercyclical buffer rate for 2019 has been assumed to be 0.07 % due to unavailability of 2019 data.

2 The systemic risk buffer has been assumed to remain at 0 % for the projected year 2019, subject to changes based on further directives.

³ The total Pillar 1 and Pillar 2 CET 1 requirement (excluding the "Pillar 2" guidance) is calculated as the sum of the SREP requirement, the higher of the G-SII, O-SII and systemic risk buffer requirement as well as the countercyclical buffer requirement.

Development of regulatory capital

Our CRR/CRD 4 Tier 1 capital amounted to € 55.1 billion as of December 31, 2018, consisting of CET 1 capital of € 47.5 billion and AT1 capital of € 7.6 billion. The CRR/CRD 4 Tier 1 capital was € 2.5 billion lower than at the end of 2017, primarily driven by a decrease in CET 1 capital of € 3.3 billion since year end 2017 while AT1 capital increased by € 0.8 billion in the same period.

The € 3.3 billion decrease of CRR/CRD 4 CET 1 capital was largely the result of increased regulatory adjustments due to a phase-in rate of 100 % in 2018 compared to a phase-in rate of 80 % in 2017. Based on ECB guidance and following the EBA Guidelines on payment commitments, effective January 1, 2018, Deutsche Bank treats irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme as an additional CET 1 capital deduction instead of risk-weighting them. This capital deduction as of December 31, 2018 was at € 0.6 billion. The adoption of IFRS 9, effective January 1, 2018, decreased capital by € 0.4 billion. Furthermore our CET 1 capital was reduced by € 0.5 billion in the second quarter of 2018 due to the payment of our common share dividends for the financial year 2017 (11 cts/share following the Annual General Meeting) and the yearly AT1 coupon payment which was not accrued in CET 1 capital as a consequence of the negative net income for the financial year 2017 following Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4). As of December 31, 2018 our positive net income of € 0.3 billion was completely offset by our common share dividend and AT1 coupon accrual of € 0.3 billion for the year-end 2018 which is in line with the ECB Decision (EU) (2015/656) on the recognition of interim or year-end profits in CET 1 capital in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4). The negative effects on CET 1 capital were partially offset by a positive impact of € 0.9 billion from our Initial Public Offering (IPO) of DWS Group GmbH & Co. KGaA (DWS).

The € 0.8 billion increase in CRR/CRD 4 AT1 capital was the result of positive effects from reduced regulatory adjustments of € 1.7 billion that were phased out from AT1 capital and a negative counter-effect from the call and redemption of one legacy Hybrid AT1 instrument with a notional amount of € 1 billion in the second quarter of 2018. The regulatory adjustments from AT1 capital reflect the residual amount of certain CET 1 deductions that are subtracted from CET 1 capital under fully loaded rules, but are allowed to reduce AT1 capital during the transitional period. The phase-in rate for these deductions on the level of CET 1 capital increased to 100 % in 2018 (80 % in 2017) and decreased correspondingly on the level of AT1 capital to 0 % in 2018 (20 % in 2017).

Our fully loaded CRR/CRD 4 Tier 1 capital as of December 31, 2018 was € 52.1 billion, compared to € 52.9 billion at the end of 2017. Our fully loaded CRR/CRD 4 CET 1 capital amounted to € 47.5 billion as of December 31, 2018, compared to € 48.3 billion as of December 31, 2017. Our fully loaded CRR/CRD 4 Additional Tier 1 capital amounted to € 4.6 billion as per end of December 2018, unchanged compared to year end 2017.

The decrease of our fully loaded CET 1 capital of € 0.8 billion compared to year end 2017 capital was mainly the result of the deduction of irrevocable payment commitments to the Single Resolution Fund and the Deposit Guarantee Schemes amounting to € 0.6 billion, the IFRS 9 adoption impact of € 0.4 billion, the payment of 11 cts/share common share dividend totaling to € 0.2 billion and the AT1 coupons of € 0.3 billion in the second quarter of 2018 and negative effects of € 0.3 billion from regulatory adjustments from prudential filters (Additional valuation adjustments). These negative effects were reduced by a positive CET 1 contribution of € 0.9 billion from our IPO of DWS.

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Own Funds Template (incl. RWA and capital ratios)

in € m.	Dec 31, 2018		Dec 31, 2017	
	4 fully loaded	CRR/CRD 41	CRR/CRD 4 fully loaded	CRR/CRD 4
Common Equity Tier 1 (CET 1) capital: instruments and reserves				
Capital instruments, related share premium accounts and other reserves ²	45,515	45,515	45,195	45,195
Retained earnings	16,297	16,297	17,977	17,977
Accumulated other comprehensive income (loss), net of tax	382	382	696	660
Independently reviewed interim profits net of any foreseeable charge or dividend ³	0	0	(751)	(751)
Other ²	846	846	0	33
Common Equity Tier 1 (CET 1) capital before regulatory adjustments	63,041	63,041	63,116	63,114
Common Equity Tier 1 (CET 1) capital: regulatory adjustments				
Additional value adjustments (negative amount)	(1,504)	(1,504)	(1,204)	(1,204)
Other prudential filters (other than additional value adjustments)	(329)	(329)	(102)	(74)
Goodwill and other intangible assets (net of related tax liabilities) (negative amount)	(8,566)	(8,566)	(8,394)	(6,715)
Deferred tax assets that rely on future profitability excluding those arising from temporary differences (net of related tax liabilities where the conditions in Art. 38 (3) CRR are met) (negative amount)	(2,758)	(2,758)	(3,004)	(2,403)
Negative amounts resulting from the calculation of expected loss amounts ⁴	(367)	(367)	(502)	(408)
Defined benefit pension fund assets (negative amount)	(1,111)	(1,111)	(1,125)	(900)
Direct, indirect and synthetic holdings by an institution of own CET 1 instruments (negative amount)	(25)	(25)	(144)	(117)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0	0	0

(amount above the 10 % / 15 % thresholds and net of eligible short positions) (negative amount)

Deferred tax assets arising from temporary differences (net of related tax liabilities where the conditions in Art. 38 (3) CRR are met) (amount above the 10 % / 15 % thresholds) (negative amount)	0	0	0	0
Other regulatory adjustments ⁵	(895)	(895)	(341)	(485)
Total regulatory adjustments to Common Equity Tier 1 (CET 1) capital	(15,555)	(15,555)	(14,816)	(12,306)
Common Equity Tier 1 (CET 1) capital	47,486	47,486	48,300	50,808
Additional Tier 1 (AT1) capital: instruments				
Capital instruments and the related share premium accounts	4,676	4,676	4,676	4,676
Amount of qualifying items referred to in Art. 484 (4) CRR and the related share premium accounts subject to phase out from AT1	N/M	3,009	N/M	3,904
Additional Tier 1 (AT1) capital before regulatory adjustments	4,676	7,685	4,676	8,579
Additional Tier 1 (AT1) capital: regulatory adjustments				
Direct, indirect and synthetic holdings by an institution of own AT1 instruments (negative amount)	(80)	(80)	(55)	(26)
Residual amounts deducted from AT1 capital with regard to deduction from CET 1 capital during the transitional period pursuant to Art. 472 CRR	N/M	N/M	N/M	(1,730)
Other regulatory adjustments	0	0	0	0
Total regulatory adjustments to Additional Tier 1 (AT1) capital	(80)	(80)	(55)	(1,756)
Additional Tier 1 (AT1) capital	4,595	7,604	4,621	6,823
Tier 1 capital (T1 = CET 1 + AT1)	52,082	55,091	52,921	57,631
Tier 2 (T2) capital	9,211	6,202	10,329	6,384
Total capital (TC = T1 + T2)	61,292	61,292	63,250	64,016
Total risk-weighted assets	350,432	350,432	344,212	343,316

Capital ratios

Common Equity Tier 1 capital ratio (as a percentage of risk-weighted assets)	13.6	13.6	14.0	14.8
Tier 1 capital ratio (as a percentage of risk-weighted assets)	14.9	15.7	15.4	16.8
Total capital ratio (as a percentage of risk-weighted assets)	17.5	17.5	18.4	18.6

N/M – Not meaningful

¹ With effect from January 1, 2018, the CRR/CRD 4 “transitional” (or “phase-in”) rules under which CET 1 regulatory adjustments were phased in have reached a rate of 100 %, together with the 100 % phase-out rate of minority interest only recognizable under the transitional rules.

²Our IPO of DWS led to a € 0.9 billion CET 1 contribution which is reflected in ‘Capital instruments, related share premium accounts and other reserves’ at € 0.1 billion and minority interest in ‘Other’ at € 0.8 billion.

3 No interim profits to be recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

4 Based on Article 159 CRR and recent guidance provided by EBA (Q&A 2017_3426) published on January 18, 2019 only unearned credit spread additional value adjustments are used as specific credit risk adjustments.

5 Includes € 0.6 billion capital deduction effective from January 2018 onwards, based on ECB guidance and following the EBA Guidelines on irrevocable payment commitments related to the Single Resolution Fund and the Deposit Guarantee Scheme. Further includes capital deduction of € 0.3 billion that was imposed on Deutsche Bank effective from October 2016 onwards based on a notification by the ECB pursuant to Article 16(1)(c) and 16(2)(d) of Regulation (EU) No 1024/2013.

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Reconciliation of shareholders' equity to regulatory capital

in € m.	CRR/CRD 4	
	Dec 31, 2018	Dec 31, 2017
Total shareholders' equity per accounting balance sheet ¹	62,495	63,174
Deconsolidation/Consolidation of entities	(33)	(58)
Of which:		
Additional paid-in capital	(12)	(6)
Retained earnings	(150)	(228)
Accumulated other comprehensive income (loss), net of tax	130	176
Total shareholders' equity per regulatory balance sheet	62,462	63,116
Minority Interests (amount allowed in consolidated CET 1) ¹	846	33
Accrual for dividend and AT1 coupons ²	(267)	0
Reversal of deconsolidation/consolidation of the position Accumulated other comprehensive income (loss), net of tax, during transitional period	0	(35)
Common Equity Tier 1 (CET 1) capital before regulatory adjustments	63,041	63,114
Additional value adjustments	(1,504)	(1,204)
Other prudential filters (other than additional value adjustments)	(329)	(74)
Regulatory adjustments relating to unrealized gains and losses pursuant to Art. 467 and 468 CRR	0	(144)
Goodwill and other intangible assets (net of related tax liabilities)	(8,566)	(6,715)
Deferred tax assets that rely on future profitability	(2,758)	(2,403)
Defined benefit pension fund assets	(1,111)	(900)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Other regulatory adjustments	(1,287)	(866)
Common Equity Tier 1 capital	47,486	50,808

¹ Our IPO of DWS led to a € 0.9 billion CET 1 contribution which is reflected in the 'Total shareholders' equity per accounting balance sheet' at € 0.1 billion and 'Minority interests' at € 0.8 billion.

² No interim profits to be recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of Regulation (EU) No 575/2013 (ECB/2015/4).

Development of regulatory capital

in € m.	CRR/CRD 4	
	twelve months ended Dec 31, 2018	twelve months ended Dec 31, 2017
Common Equity Tier 1 (CET 1) capital - opening amount	50,808	47,782
Common shares, net effect	0	1,760
Additional paid-in capital	327	6,153
Retained earnings	(662)	(795)
Common shares in treasury, net effect/(+) sales (-) purchase	(6)	(9)
Movements in accumulated other comprehensive income	(134)	(2,748)
Accrual for dividend and Additional Tier 1 (AT1) coupons ¹	(267)	0
Additional value adjustments	(299)	194
Goodwill and other intangible assets (net of related tax liabilities)	(1,850)	(1,653)
Deferred tax assets that rely on future profitability (excluding those arising from temporary differences)	(355)	(91)
Negative amounts resulting from the calculation of expected loss amounts	41	(219)
Defined benefit pension fund assets	(211)	(333)
Direct, indirect and synthetic holdings by the institution of the CET 1 instruments of financial sector entities where the institution has a significant investment in those entities	0	0
Securitization positions not included in risk-weighted assets	0	0
Deferred tax assets arising from temporary differences (amount above 10 % and 15 % threshold, net of related tax liabilities where the conditions in Art. 38 (3) CRR are met)	0	354
Other, including regulatory adjustments	95	413
Common Equity Tier 1 (CET 1) capital - closing amount	47,486	50,808
Additional Tier 1 (AT1) Capital – opening amount	6,823	7,703
New Additional Tier 1 eligible capital issues	0	0
Matured and called instruments	(1,008)	(2,376)
Transitional arrangements	1,730	1,708
Of which:		
Goodwill and other intangible assets (net of related tax liabilities)	1,679	1,696
Other, including regulatory adjustments	59	(212)
Additional Tier 1 (AT1) Capital – closing amount	7,604	6,823
Tier 1 capital	55,091	57,631
Tier 2 (T2) capital – closing amount	6,202	6,384
Total regulatory capital	61,292	64,016

¹ No interim profits to be recognized as per ECB Decision (EU) 2015/656 in accordance with the Article 26(2) of

Regulation (EU) No 575/2013 (ECB/2015/4).

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Development of risk-weighted assets

The table below provides an overview of RWA broken down by risk type and business division. They include the aggregated effects of the segmental reallocation of infrastructure related positions, if applicable, as well as reallocations between the segments.

Risk-weighted assets by risk type and business division according to transitional rules

	Dec 31, 2018				
in € m.	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Corporate & Other	Total
Credit Risk	115,035	76,592	5,236	15,964	212,827
Settlement Risk	39	0	0	47	86
Credit Valuation Adjustment (CVA)	7,642	202	112	42	7,997
Market Risk	37,446	89	0	0	37,535
Operational Risk	76,145	10,827	5,017	0	91,989
Total	236,307	87,709	10,365	16,053	350,432

	Dec 31, 2017				
in € m.	Corporate & Investment Bank	Private & Commercial Bank	Asset Management	Corporate & Other	Total
Credit Risk	118,940	75,377	3,273	16,552	214,142
Settlement Risk	142	0	0	5	147
Credit Valuation Adjustment (CVA)	6,189	171	84	7	6,451
Market Risk	30,896	70	0	0	30,966
Operational Risk	74,936	11,654	5,020	0	91,610
Total	231,103	87,272	8,378	16,564	343,316

The RWA according to CRR/CRD 4 were € 350.4 billion as of December 31, 2018, compared to € 343.3 billion at the end of 2017, which were still subject to transitional arrangements. The increase by € 7.1 billion was primarily driven by Market Risk and CVA RWA. The latter is driven by several methodology and policy-related changes. The Market Risk RWA increase of € 6.6 billion is driven by higher Stressed VaR and temporary increases in concentration risk. Credit Risk RWA decreased by € 1.3 billion mainly resulting from parameter recalibrations as well as model and methodology changes in addition to lower RWA due to the improved capturing of pending settlements for syndicated loans, which was partly offset by higher RWA due to business growth in our CIB and PCB segments.

Since January 1, 2018 the RWA under transitional rules is equal to the fully loaded measure as all transitional arrangements expired. For December 31, 2017 the RWA on transitional rules still recognized a small subset of equity positions according to grandfathering rules resulting in transitional RWA of € 343.3 billion, slightly below the fully loaded RWA of € 344.2 billion.

The tables below provide an analysis of key drivers for risk-weighted asset movements observed for credit risk, credit valuation adjustments as well as market and operational risk in the reporting period. They also show the corresponding movements in capital requirements, derived from the RWA by an 8% capital ratio.

Development of risk-weighted assets for Credit Risk including Counterparty Credit Risk

in € m.	Dec 31, 2018		Dec 31, 2017	
	Credit risk RWA	Capital requirements	Credit risk RWA	Capital requirements
Credit risk RWA balance, beginning of year	214,142	17,131	220,345	17,628
Book size	4,086	327	3,523	282
Book quality	(3,314)	(265)	506	40
Model updates	(1,357)	(109)	1,272	102
Methodology and policy	(976)	(78)	0	0
Acquisition and disposals	(1,653)	(132)	0	0
Foreign exchange movements	2,536	203	(10,162)	(813)
Other	(637)	(51)	(1,342)	(107)
Credit risk RWA balance, end of year	212,827	17,026	214,142	17,131

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Of which: Development of risk-weighted assets for Counterparty Credit Risk

in € m.	Dec 31, 2018		Dec 31, 2017	
	Counterparty credit risk RWA	Capital requirements	Counterparty credit risk RWA	Capital requirements
Counterparty credit risk RWA balance, beginning of year	33,924	2,714	35,614	2,849
Book size	(8,235)	(659)	(4,628)	(370)
Book quality	104	8	3,715	297
Model updates	(850)	(68)	1,272	102
Methodology and policy	0	0	0	0
Acquisition and disposals	0	0	0	0
Foreign exchange movements	339	27	(2,048)	(164)
Other	0	0	0	0
Counterparty credit risk RWA balance, end of year	25,282	2,023	33,924	2,714

The classifications of key drivers for the RWA credit risk development table are fully aligned with the recommendations of the Enhanced Disclosure Task Force (EDTF). Organic changes in our portfolio size and composition are considered in the category “Book size”. The category “Book quality” mainly represents the effects from portfolio rating migrations, loss given default, model parameter recalibrations as well as collateral and netting coverage activities. “Model updates” include model refinements and advanced model roll out. RWA movements resulting from externally, regulatory-driven changes, e.g. applying new regulations, are considered in the

“Methodology and policy” section. “Acquisition and disposals” is reserved to show significant exposure movements which can be clearly assigned to new businesses or disposal-related activities. Changes that cannot be attributed to the above categories are reflected in the category “Other”.

The decrease in RWA for credit risk by 0.6 % or € 1.3 billion since December 31, 2017 is driven by book quality and model- and methodology-related changes. The category “Book quality” includes reductions resulting from parameter recalibrations and data enhancements. The category “Model updates” provides further reductions mainly stemming from refinements in our internal model method for derivatives. Furthermore the category “Methodology and policy” reflects the derecognition of irrevocable payment commitments to the Single Resolution Fund and the Deposit Guarantee Scheme which are deducted from CET 1 since the beginning of the year. “Other” principally reflects the net impact from lower RWA due to the improved capturing of pending settlements for syndicated loans and higher RWA for equity positions following the phase-out of the respective grandfathering provision under CRR/CRD 4 transitional rules. “Acquisition and disposals” provides the reduction in credit risk RWA, which is related to the partial sale of our Poland retail business. These reductions were partly offset by increase in the category “Book size” representing business growth in our CIB and PCB segments in addition to an increase resulting from foreign exchange movements.

The decrease in counterparty credit risk is mainly driven by trade terminations as well as data and collateral enhancements across the businesses. In addition the category “Model updates” contributed to the overall decrease which includes the impact from refinements in our internal model method for derivatives.

Based on the CRR/CRD 4 regulatory framework, we are required to calculate RWA using the CVA which takes into account the credit quality of our counterparties. RWA for CVA covers the risk of mark-to-market losses on the expected counterparty risk in connection with OTC derivative exposures. We calculate the majority of the CVA based on our own internal model as approved by the BaFin.

Development of risk-weighted assets for Credit Valuation Adjustment

	Dec 31, 2018		Dec 31, 2017	
in € m.	CVA RWA	Capital requirements	CVA RWA	Capital requirements
CVA RWA balance, beginning of year	6,451	516	9,416	753
Movement in risk levels	(770)	(62)	(3,228)	(258)
Market data changes and recalibrations	0	0	0	0
Model updates	0	0	0	0
Methodology and policy	2,028	162	870	70
Acquisitions and disposals	0	0	0	0
Foreign exchange movements	288	23	(607)	(49)
CVA RWA balance, end of year	7,997	640	6,451	516

The development of CVA RWA is broken down into a number of categories: “Movement in risk levels”, which includes changes to the portfolio size and composition; “Market data changes and calibrations”, which includes changes in market data levels and volatilities as well as recalibrations; “Model updates” refers to changes to either the IMM credit exposure models or the value-at-risk models that are used for CVA RWA; “Methodology and policy” relates to changes to the regulation. Any significant business acquisitions or disposals would be presented in the category with that name.

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As of December 31, 2018, the RWA for CVA amounted to € 8.0 billion, representing an increase of € 1.5 billion (19 %) compared with € 6.5 billion for December 31, 2017. The overall increase was driven by “Methodology and policy” changes, with some offset from de-risking of the portfolio and currency effects; the most notable policy change was the inclusion of securities financing transactions following a change of regulatory guidance.

Development of risk-weighted assets for Market Risk

in € m.	Dec 31, 2018						Total RWA	Total capital requirements
	VaR	SVaR	IRC	CRM	Other			
Market risk RWA balance, beginning of year	4,380	10,896	9,871	56	5,763	30,966	2,477	
Movement in risk levels	799	4,562	1,174	(3)	903	7,435	595	
Market data changes and recalibrations	(51)	0	0	0	(165)	(215)	(17)	
Model updates/changes	108	431	80	0	(200)	420	34	
Methodology and policy	131	537	(1,057)	(53)	(500)	(941)	(75)	
Acquisitions and disposals	0	0	0	0	(223)	(223)	(18)	
Foreign exchange movements	0	0	0	0	94	94	8	
Other	0	0	0	0	0	0	0	
Market risk RWA balance, end of year	5,368	16,426	10,068	0	5,673	37,535	3,003	

in € m.	Dec 31, 2017						Total RWA	Total capital requirements
	VaR	SVaR	IRC	CRM	Other			
Market risk RWA balance, beginning of year	5,957	14,271	8,662	273	4,599	33,762	2,701	
Movement in risk levels	(1,658)	(3,375)	2,598	(217)	922	(1,729)	(138)	
Market data changes and recalibrations	81	0	0	0	581	661	53	
Model updates/changes	0	0	(1,390)	0	(38)	(1,428)	(114)	
Methodology and policy	0	0	0	0	0	0	0	
Acquisitions and disposals	0	0	0	0	0	0	0	
Foreign exchange movements	0	0	0	0	(301)	(301)	(24)	
Other	0	0	0	0	0	0	0	
Market risk RWA balance, end of year	4,380	10,896	9,871	56	5,763	30,966	2,477	

The analysis for market risk covers movements in our internal models for value-at-risk (VaR), stressed value-at-risk (SvaR), incremental risk charge (IRC) and comprehensive risk measure (CRM) as well as results from the market risk standardized approach, which are captured in the table under the category “Other”. The market risk standardized approach covers trading securitizations and nth-to-default derivatives, longevity exposures, relevant Collective Investment Undertakings and market risk RWA from Postbank.

The market risk RWA movements due to changes in market data levels, volatilities, correlations, liquidity and ratings are included under the “Market data changes and recalibrations” category. Changes to our market risk RWA internal models, such as methodology enhancements or risk scope extensions, are included in the category of “Model updates”. In the “Methodology and policy” category we reflect regulatory driven changes to our market risk RWA models and calculations. Significant new businesses and disposals would be assigned to the line item “Acquisition and disposals”. The impacts of “Foreign exchange movements” are only calculated for the CRM and Standardized approach methods.

As of December 31, 2018 the RWA for market risk was € 37.5 billion which has increased by € 6.6 billion (21 %) since December 31, 2017. The increase was primarily driven by stressed value-at-risk coming from the "Movement in risk levels" category from a reduction in diversification benefit due to changes in the composition of interest rate and equity related exposures.

Development of risk-weighted assets for operational risk

in € m.	Dec 31, 2018		Dec 31, 2017	
	Operational risk RWA	Capital requirements	Operational risk RWA	Capital requirements
Operational risk RWA balance, beginning of year	91,610	7,329	92,675	7,414
Loss profile changes (internal and external)	(2,847)	(228)	(2,815)	(225)
Expected loss development	5,407	433	1,104	88
Forward looking risk component	484	39	(3,265)	(261)
Model updates	(2,666)	(213)	3,912	313
Methodology and policy	0	0	0	0
Acquisitions and disposals	0	0	0	0
Operational risk RWA balance, end of year	91,989	7,359	91,610	7,329

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Changes of internal and external loss events are reflected in the category “Loss profile changes”. The category “Expected loss development” is based on divisional business plans as well as historical losses and is deducted from the AMA capital figure within certain constraints. The category “Forward looking risk component” reflects qualitative adjustments and as such the effectiveness and performance of the day-to-day operational risk management activities via NFR appetite metrics and RCA scores, focusing on the business environment and internal control factors. The category “Model updates” covers model refinements such as the implementation of model changes. The category “Methodology and policy” represents externally driven changes such as regulatory add-ons. The category “Acquisition and disposals” represents significant exposure movements which can be clearly assigned to new or disposed businesses.

The overall RWA increase of € 0.4 billion was driven by several, largely offsetting effects. A reduced litigation intensity throughout the industry as well as decreasing provision and legal forecast levels for Deutsche Bank led to a lighter loss profile feeding into our capital model. These loss profile changes (internal and external) reduced our RWA for Operational Risk by € 2.8 billion. Moreover, a number of model updates resulted in an overall RWA decrease of € 2.7 billion. These improvements mostly related to the alignment of weights for internal and external loss data, but also to the implementation of our enhanced RCA process. The resulting decrease has been partly compensated by changes

in the forward looking risk component, where weaker risk appetite metrics and RCA results led to an RWA increase of € 0.5 billion. The most prominent impact, however, originated from the development of our expected loss deductible. We derive our capital requirements as the difference between the total losses simulated in our AMA model and an expected loss deductible. The deductible is given by the minimum of the average total loss projected by the model and our operational risk loss forecasts. In 2018, the expected loss deductible was dominated by the latter, which declined strongly due to our positive outlook on the development of our operational risk profile. Our simulated total loss estimate, which predominantly relies on historical information, was less reactive to this trend, so that the difference between the two quantities caused an RWA increase of € 5.4 billion.

Economic Capital

Internal Capital Adequacy

Our internal capital adequacy assessment process (ICAAP) is aimed at maintaining the viability of Deutsche Bank on an ongoing basis. We assess our internal capital adequacy from an economic perspective as the ratio of our internal capital supply divided by our internal economic capital demand as shown in the table below.

Total capital supply and demand

in € m. (unless stated otherwise)	Dec 31, 2018	Dec 31, 2017
Capital supply		
Shareholders' equity	62,495	63,174
Noncontrolling interests ¹	900	0
AT1 coupons accruals	(218)	(213)
Gain on sale of securitizations, cash flow hedges	(26)	(29)
Fair value gains on own debt and debt valuation adjustments, subject to own credit risk	(304)	(73)
Additional valuation adjustments	(1,504)	(1,204)
Intangible assets	(9,141)	(8,839)
IFRS deferred tax assets excl. temporary differences	(3,090)	(3,341)
Expected loss shortfall	(367)	(502)
Defined benefit pension fund assets ²	(1,111)	(1,125)
Holdings of own common equity tier 1 capital instruments	(11)	(131)
Home loans and savings protection ("Fonds zur baupartechnischen Absicherung")	0	(19)
Other adjustments ³	(1,122)	(322)
Additional tier 1 equity instruments	4,675	4,675
Capital supply	51,176	52,051
Total economic capital requirement		
Credit risk	10,610	10,769
Market risk	10,341	10,428
Operational risk	7,359	7,329
Business risk	4,758	5,677
Diversification benefit	(6,960)	(7,074)
Capital demand	26,108	27,129

Internal capital adequacy ratio	196 %	192 %
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1Includes noncontrolling interest up to the economic capital requirement for each subsidiary.

2Reported as net assets (assets minus liabilities) of a defined pension fund, i.e. applicable for overfunded pension plans.

3Includes € 0.6 billion capital deduction of irrevocable payment commitments related to the Single Resolution Fund and Deposit Guarantee Scheme, since January 1, 2018.

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A ratio of more than 100 % signifies that the total capital supply is sufficient to cover the capital demand determined by the risk positions. This ratio was 196 % as of December 31, 2018, compared with 192 % as of December 31, 2017. The change of the ratio was mainly due to a decrease in capital demand partially offset by decrease in capital supply. The capital supply decreased by € 0.9 billion mainly driven by negative effects from deduction of irrevocable payment commitments to the Single Resolution Fund and the Deposit Guarantee Schemes of € 0.6 billion, IFRS 9 adoption of € 0.4 billion, unrealized losses of € 0.3 billion from interest rate changes, additional value adjustment deduction of € 0.3 billion and payment of common share dividend of € 0.2 billion. These negative effects were partially reduced by a positive contribution of € 1.0 billion from our initial public offering (IPO) of DWS Group GmbH & Co. KGaA (“DWS”). The decrease in capital demand was driven by lower economic capital usage as explained in the section “Risk Profile”.

The above capital adequacy measures apply to the consolidated Deutsche Bank Group as a whole and form an integral part of our risk and capital management framework.

Leverage Ratio

We manage our balance sheet on a Group level and, where applicable, locally in each region. In the allocation of financial resources we favor business portfolios with the highest positive impact on our profitability and shareholder value. We monitor and analyze balance sheet developments and track certain market-observed balance sheet ratios. Based on this we trigger discussion and management action by the Group Risk Committee (GRC). Following the publication of the CRR/CRD 4 framework, we established a leverage ratio calculation according to that framework.

Leverage Ratio according to revised CRR/CRD 4 framework

The CRR/CRD 4 framework introduced a non-risk based leverage ratio that is intended to act as a supplementary measure to the risk based capital requirements. Its objectives are to constrain the build-up of leverage in the banking sector, helping avoid destabilizing deleveraging processes which can damage the broader financial system and the economy, and to reinforce the risk based requirements with a simple, non-risk based “backstop” measure. While the CRR/CRD 4 framework currently does not provide for a mandatory minimum leverage ratio to be complied with, the legislative proposals as part of the European Trilogue include a 3 % minimum requirement but the proposed implementation dates are different. The final Basel rules that have been published in December 2017 also include an additional leverage ratio buffer requirement for banks identified as global systemically important institutions (“G-SII”) of 50 % of the G-SII buffer. Details of the implementation and the timing of the application of this additional leverage ratio buffer remain subject to finalization of the legislative process.

We calculate our leverage ratio exposure on a fully loaded basis in accordance with Article 429 of the CRR as per Delegated Regulation (EU) 2015/62 of October 10, 2014 published in the Official Journal of the European Union on January 17, 2015 amending Regulation (EU) No 575/2013. In addition, we provide the leverage ratio on a phase-in

basis as displayed below in the tables.

Our total leverage ratio exposure includes derivatives, securities financing transactions (SFTs), off-balance sheet exposure and other on-balance sheet exposure (excluding derivatives and SFTs).

The leverage exposure for derivatives is calculated by using the regulatory mark-to-market method for derivatives comprising the current replacement cost plus a regulatory defined add-on for the potential future exposure. Variation margin received in cash from counterparties is deducted from the current replacement cost portion of the leverage ratio exposure measure and variation margin paid to counterparties is deducted from the leverage ratio exposure measure related to receivables recognized as an asset on the balance sheet, provided certain conditions are met. Deductions of receivables for cash variation margin provided in derivatives transactions are shown under derivative exposure in the table "Leverage ratio common disclosure" below. The effective notional amount of written credit derivatives, i.e., the notional reduced by any negative fair value changes that have been incorporated in Tier 1 capital is included in the leverage ratio exposure measure; the resulting exposure measure is further reduced by the effective notional amount of purchased credit derivative protection on the same reference name provided certain conditions are met.

The securities financing transaction (SFT) component includes the gross receivables for SFTs, which are netted with SFT payables if specific conditions are met. In addition to the gross exposure a regulatory add-on for the counterparty credit risk is included.

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The off-balance sheet exposure component follows the credit risk conversion factors (CCF) of the standardized approach for credit risk (0 %, 20 %, 50 %, or 100 %), which depend on the risk category subject to a floor of 10 %.

The other on-balance sheet exposure component (excluding derivatives and SFTs) reflects the accounting values of the assets (excluding derivatives and SFTs) as well as regulatory adjustments for asset amounts deducted in determining Tier 1 capital.

The following tables show the leverage ratio exposure and the leverage ratio, both on a fully loaded basis, in accordance with the disclosure tables of the implementing technical standards (ITS) which were adopted by the European Commission via Commission Implementing Regulation (EU) 2016/200 published in the Official Journal of the European Union on February 16, 2016. For additional information, they also contain the phase-in figures.

Summary reconciliation of accounting assets and leverage ratio exposures

in € bn.	Dec 31, 2018	Dec 31, 2017
Total assets as per published financial statements	1,348	1,475
Adjustment for entities which are consolidated for accounting purposes but are outside the scope of regulatory consolidation	0	5
Adjustments for derivative financial instruments	(140)	(172)
Adjustment for securities financing transactions (SFTs)	14	41
Adjustment for off-balance sheet items (i.e. conversion to credit equivalent amounts of off-balance sheet exposures)	99	95
Other adjustments	(49)	(50)

Leverage ratio total exposure measure (fully loaded)	1,273	1,395
Leverage ratio total exposure measure (phase-in)	1,273	1,396

Leverage ratio common disclosure

in € bn. (unless stated otherwise)	Dec 31, 2018	Dec 31, 2017
Total derivative exposures	159	166
Total securities financing transaction exposures	103	158
Total off-balance sheet exposures	99	95
Other Assets	925	990
Asset amounts deducted in determining Tier 1 capital ¹	(13)	(14)
Tier 1 capital (fully loaded)	52.1	52.9
Leverage ratio total exposure measure (fully loaded)	1,273	1,395
Leverage ratio (fully loaded, in %)	4.1	3.8
Tier 1 capital (phase-in)	55.1	57.6
Leverage ratio total exposure measure (phase-in)	1,273	1,396
Leverage ratio (phase-in, in %)	4.3	4.1

¹Using a fully loaded definition of Tier 1 capital. The amount using a transitional definition of Tier 1 capital is € (13) billion and € (13) billion as of December 31, 2018 and December 31, 2017, respectively.

Description of the factors that had an impact on the leverage ratio in 2018

As of December 31, 2018, our fully loaded CRR/CRD 4 leverage ratio was 4.1 % compared to 3.8 % as of December 31, 2017, taking into account as of December 31, 2018 a fully loaded Tier 1 capital of € 52.1 billion over an applicable exposure measure of € 1,273 billion (€ 52.9 billion and € 1,395 billion as of December 31, 2017, respectively).

Our CRR/CRD 4 leverage ratio according to transitional provisions was 4.3 % as of December 31, 2018 (4.1 % as of December 31, 2017), calculated as Tier 1 capital according to transitional rules of € 55.1 billion over an applicable exposure measure of € 1,273 billion (€ 57.6 billion and € 1,396 billion as of December 31, 2017, respectively). Starting with January 1, 2018, the exposure measure under transitional rules is equal to the fully loaded exposure measure while it was € 1 billion higher as of December 31, 2017 as the asset amounts deducted in determining Tier 1 capital were lower under transitional rules.

Over the year 2018, our leverage ratio exposure decreased by € 122 billion to € 1,273 billion. This is primarily driven by the reduction of € 55 billion in SFT exposures reflecting a decrease on the balance sheet in the SFT related items (securities purchased under resale agreements, securities borrowed and receivables from prime brokerage) and lower add-ons for counterparty credit risk due to extended collateral recognition. The € 65 billion reduction in Other Assets reflects the development on our balance sheet, in particular for cash and central bank / interbank balances which decreased by € 37 billion and non-derivative trading assets which decreased by € 33 billion. Derivatives decreased by € 7 billion from lower add-ons for the potential future exposure. Off-balance sheet exposures slightly increased by € 4 billion corresponding to higher notional amounts for irrevocable lending commitments.

The decrease of the leverage ratio exposure in 2018 includes a positive foreign exchange impact of € 26 billion mainly due to the depreciation of the Euro against the U.S. dollar.

Our leverage ratio calculated as the ratio of total assets under IFRS to total equity under IFRS was 20 as of December 31, 2018 compared to 22 as of December 31, 2017.

For main drivers of the Tier 1 capital development please refer to section “Regulatory Capital” in this report.

Minimum Requirement of Own Funds and Eligible Liabilities (“MREL”)

MREL Requirements

The minimum requirement for own funds and eligible liabilities (“MREL”) requirement was introduced by the European Union’s regulation establishing uniform rules and a uniform procedure for the resolution of credit institutions (Single Resolution Mechanism Regulation or “SRM Regulation”) and the European Union’s Directive establishing a framework for the recovery and resolution of credit institutions (Bank Recovery and Resolution Directive or “BRRD”) as implemented into German law by the German Recovery and Resolution Act.

The currently required level of MREL is determined by the competent resolution authorities for each supervised bank individually on a case-by-case basis, depending on the respective preferred resolution strategy. In the case of Deutsche Bank AG, MREL is determined by the Single Resolution Board (“SRB”). While there is no statutory minimum level of MREL, the BRRD and a delegated regulation set out criteria which the resolution authority must consider when determining the relevant required level of MREL. Guidance is provided through a policy published annually by the SRB.

In the second quarter of 2018, the SRB has set a binding MREL ratio for Deutsche Bank which was communicated via the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, “BaFin”). The MREL ratio on a consolidated basis has been set at 9.14 % of Total Liabilities and Own Funds (“TLOF”) and applied immediately. TLOF principally consists of IFRS total liabilities, reflecting the regulatory scope of consolidation, after consideration of derivatives netting and of own funds, i.e. regulatory capital. MREL will be reviewed annually by the SRB.

Deutsche Bank AG, as a global systemically important bank, will also become subject to global minimum standards for its Total Loss-Absorbing Capacity (“TLAC”). The TLAC requirement will be implemented by the November 2016 banking reform package, on which the European Parliament and the Council of the European Union reached a provisional political agreement in December 2018. We expect that the TLAC requirements will be effective immediately when the provisions of the banking reform package enter into force, which is currently expected to occur in the first half of 2019.

The banking reform package implements TLAC by introducing a new “Pillar 1” MREL requirement for global systemically important institutions, such as Deutsche Bank. This new requirement is based on both risk-based and non-risk-based denominators and is expected to be set at the higher of 18 % of total risk exposure and 6.75 % of the leverage ratio exposure measure following a transition period. In addition, the competent authorities will have the ability to impose an MREL add-on requirement on global systemically important institutions. TLAC and MREL requirements are specifically designed to require banks to maintain a sufficient amount of instruments which are eligible to absorb losses in resolution with the aim of ensuring that failing banks can be resolved without recourse to taxpayers’ money.

MREL ratio development

As of December 31, 2018 TLOF were € 1,058 billion and available MREL were € 118 billion, corresponding to a ratio of 11.14 %. This means that Deutsche Bank has a comfortable buffer of own funds and eligible liabilities which is € 21 billion above our MREL of € 97 billion (i.e. 9.14 % of TLOF).

MREL disclosure

in € m. (unless stated otherwise)	Dec 31, 2018
Regulatory capital elements of MREL	
Common Equity Tier 1 capital (CET 1)	47,486
Additional Tier 1 (AT1) capital instruments eligible under MREL	7,604
Tier 2 (T2) capital instruments eligible under MREL	
Tier 2 (T2) capital instruments before MREL adjustments	6,202
Tier 2 (T2) capital instruments adjustments for MREL	745
Tier 2 (T2) capital instruments eligible under MREL	6,947
Total regulatory capital elements of MREL	62,037
Other elements of MREL	
Senior non-preferred plain vanilla	54,852
Senior preferred plain vanilla	1,020
Total other elements of MREL	55,872
Total liabilities and own funds after prudential netting (TLOF)	1,058,484
MREL ratio	
MREL ratio (as percentage of TLOF)	11.14%

Own Funds and Eligible Liabilities

In order to meet the MREL requirement, Deutsche Bank needs to ensure that a sufficient amount of eligible instruments is maintained. Instruments eligible for MREL are regulatory capital instruments (“own funds”) and liabilities that meet certain criteria, which are referred to as eligible liabilities.

Own funds used for MREL excludes Tier 2 capital instruments with a remaining maturity of less than 1 year and includes the full amount of T2 capital instruments with a remaining maturity of greater than 1 year and less than 5 years which are excluded from regulatory capital

Eligible liabilities are liabilities that meet eligibility criteria which are supposed to ensure that they are structurally suited as loss-absorbing capital. As a result, eligible liabilities exclude deposits which are covered by an insurance deposit protection scheme or which are preferred under German insolvency law (e.g., deposits from private clients as well as small and medium-size enterprises). Among other things, secured liabilities, derivatives liabilities and structured notes are generally excluded as well. In addition, eligible liabilities must have a remaining time to maturity of at least one year and must either be issued under the law of a Member State of the European Union or must include a bail-in clause in their contractual terms to make write-down or conversion effective.

The banking reform package will introduce additional eligibility criteria that global systemically important institutions will have to meet with respect to TLAC and any MREL-add on requirement, most notably a subordination requirement. Effective January 1, 2017, the German Banking Act provided for a new class of statutorily subordinated debt securities that rank as “senior non-preferred” below the bank’s other senior liabilities (but in priority to the bank’s contractually subordinated liabilities, such as those qualifying as Tier 2 instruments). Following a harmonization effort by the European Union implemented in Germany effective July 21, 2018, banks are permitted to decide if a specific issuance of eligible senior debt will be in the non-preferred or in the preferred category. Any such “senior non-preferred” debt instruments issued by Deutsche Bank AG under such new rules rank on parity with its then outstanding debt instruments that were classified as “senior non-preferred” under the prior rules. Deutsche Bank predominantly relies on Deutsche Bank AG’s “senior non-preferred” debt instruments as eligible liabilities for MREL.

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Credit Risk Exposure

For 2018, we provide information following the IFRS 9 accounting standard, while 2017 numbers are based on the IAS 39 accounting rules and are presented in the old format. Since the accounting requirements have changed significantly, numbers are not comparable. For further information please refer to chapter “IFRS 9 Transition Impact Analysis” in Note 2 “Recently Adopted and New Accounting Pronouncements” to the consolidated financial statement.

Counterparty credit exposure arises from our traditional non-trading lending activities which include elements such as loans and contingent liabilities, as well as from our direct trading activity with clients in certain instruments including OTC derivatives like foreign exchange forwards and Forward Rate Agreements. Default risk also arises from our positions in equity products and traded credit products such as bonds.

We define our credit exposure by taking into account all transactions where losses might occur due to the fact that counterparties may not fulfill their contractual payment obligations.

Maximum Exposure to Credit Risk

The maximum exposure to credit risk table shows the direct exposure before consideration of associated collateral held and other credit enhancements (netting and hedges) that do not qualify for offset in our financial statements for the periods specified. The table also presents exposures which are subject to impairment in accordance with IFRS 9. The netting credit enhancement component includes the effects of legally enforceable netting agreements as well as the offset of negative mark-to-markets from derivatives against pledged cash collateral. The collateral credit enhancement component mainly includes real estate, collateral in the form of cash as well as securities-related collateral. In relation to collateral we apply internally determined haircuts and additionally cap all collateral values at the level of the respective collateralized exposure.

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Maximum Exposure to Credit Risk

in € m.	Dec 31, 2018					
	Maximum exposure to	Subject to impairment	Netting	Collateral	Guarantees and Credit	Total credit enhancements

Own Funds and Eligible Liabilities

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	credit risk ¹		derivatives ²			
Financial assets at amortized cost ³						
Cash and central bank balances	188,736	188,736	–	0	–	0
Interbank balances (w/o central banks)	8,885	8,885	–	4	0	4
Central bank funds sold and securities purchased under resale agreements	8,222	8,222	–	7,734	–	7,734
Securities borrowed	3,396	3,396	–	0	–	0
Loans	404,537	404,537	–	224,353	16,582	240,934
Other assets subject to credit risk ^{4,5}	71,899	65,010	29,073	3,199	79	32,352
Securities held to maturity	N/M	N/M	N/M	N/M	N/M	N/M
Total financial assets at amortized cost ³	685,676	678,787	29,073	235,290	16,661	281,024
Financial assets at fair value through profit or loss ⁶						
Trading assets	96,966	–	–	677	155	831
Positive market values from derivative financial instruments	320,058	–	250,231	48,548	82	298,861
Non-trading financial assets mandatory at fair value through profit or loss	97,771	–	245	67,385	0	67,630
Of which:						
Securities purchased under resale agreement	44,543	–	245	43,258	0	43,503
Securities borrowed	24,210	–	–	24,003	0	24,003
Loans	12,741	–	–	125	0	125
Financial assets designated at fair value through profit or loss	104	–	–	0	0	0
Financial assets available for sale	N/M	N/M	N/M	N/M	N/M	N/M
Total financial assets at fair value through profit or loss	514,899	–	250,476	116,610	237	367,323
Financial assets at fair value through OCI	51,182	51,182	0	1,488	520	2,008
Of which:						

Securities purchased under resale agreement	1,097	1,097	–	621	0	621
Securities borrowed	0	0	–	0	0	0
Loans	5,092	5,092	–	450	104	554
Total financial assets at fair value through OCI	51,182	51,182	–	1,488	520	2,008
Financial guarantees and other credit related contingent liabilities ⁷	51,605	51,605	–	3,375	5,291	8,666
Revocable and irrevocable lending commitments and other credit related commitments ⁷	212,049	211,055	–	16,418	4,734	21,152
Total off-balance sheet	263,654	262,659	–	19,793	10,025	29,818
Maximum exposure to credit risk	1,515,410	992,628	279,550	373,181	27,443	680,173

¹ Does not include credit derivative notional sold (€ 415,967 million) and credit derivative notional bought protection.

²Bought Credit protection is reflected with the notional of the underlying.

³All amounts at gross value before deductions of allowance for credit losses.

⁴All amounts at amortized cost (gross) except for qualifying hedge derivatives, which are reflected at Fair value through P&L.

⁵Includes Asset Held for Sale regardless of accounting classification.

⁶Excludes equities, other equity interests and commodities.

⁷Figures are reflected at notional amounts.

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in € m. ¹	Dec 31, 2017				
	Maximum exposure to credit risk ²	Credit Enhancements			Total credit enhancements
		Netting	Collateral	Guarantees and Credit derivatives ³	
Cash and central bank balances	225,655	–	0	–	0
Interbank balances (w/o central banks)	9,265	–	0	7	7
Central bank funds sold and securities purchased under resale agreements	9,971	–	9,914	–	9,914
Securities borrowed	16,732	–	15,755	–	15,755
Financial assets at fair value through profit or loss ⁴	550,313	286,149	136,650	265	423,065

Maximum Exposure to Credit Risk

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Trading assets	98,730	–	2,635	146	2,781
Positive market values from derivative financial instruments	361,032	285,421	52,797	119	338,338
Financial assets designated at fair value through profit or loss	90,551	728	81,218	0	81,946
Of which:					
Securities purchased under resale agreement	57,843	728	56,566	0	57,294
Securities borrowed	20,254	–	20,034	0	20,034
Financial assets available for sale ⁴	47,766	–	559	0	559
Loans ⁵	405,621	–	211,578	20,063	231,641
Securities held to maturity	3,170	–	–	–	–
Other assets subject to credit risk	66,900	29,854	1,514	56	31,424
Financial guarantees and other credit related contingent liabilities ⁶	48,212	–	4,024	6,579	10,604
Irrevocable lending commitments and other credit related commitments ⁶	158,253	–	7,544	1,759	9,303
Maximum exposure to credit risk	1,541,858	316,003	387,538	28,730	732,271

¹ All amounts at carrying value unless otherwise indicated.

² Does not include credit derivative notional sold (€ 828,804 million) and credit derivative notional bought protection.

³ Bought credit protection is reflected with the notional of the underlying.

⁴ Excludes equities, other equity interests and commodities.

⁵ Gross loans less deferred expense/unearned income before deductions of allowance for loan losses.

⁶ Figures are reflected at notional amounts. Revocable commitments not included in the year were € 45.1 billion.

The overall decrease in maximum exposure to credit risk for December 31, 2018 is € 26.4 billion, mainly driven by a € 41.0 billion decrease in positive market values from derivative financial instruments and Cash and central bank balances decreased by € 36.9 billion, offset by an increase due to first time inclusion of revocable lending commitments of € 44.3 billion.

Included in the category of trading assets as of December 31, 2018, were traded bonds of € 85.2 billion (€ 87.3 billion as of December 31, 2017) of which over 79 % were investment-grade (over 82 % as of December 31, 2017).

Credit Enhancements are split into three categories: netting, collateral and guarantees / credit derivatives. Haircuts, parameter setting for regular margin calls as well as expert judgments for collateral valuation are employed to prevent market developments from leading to a build-up of uncollateralized exposures. All categories are monitored and reviewed regularly. Overall credit enhancements received are diversified and of adequate quality being largely cash, highly rated government bonds and third-party guarantees mostly from well rated banks and insurance companies. These financial institutions are domiciled mainly in European countries and the United States. Furthermore we have

collateral pools of highly liquid assets and mortgages (principally consisting of residential properties mainly in Germany) for the homogeneous retail portfolio.

Main Credit Exposure Categories

The tables in this section show details about several of our main credit exposure categories, namely loans, revocable and irrevocable lending commitments, contingent liabilities over-the-counter (“OTC”) derivatives, debt securities and repo and repo-style transactions:

- “Loans” are gross loans as reported on our balance sheet at amortized cost and loans at fair value through other comprehensive income before deduction of allowance for credit losses, it also includes loans at fair value through profit and loss. This includes “Traded loans” that are bought and held for the purpose of selling them in the near term, or the material risks of which have all been hedged or sold. From a regulatory perspective the latter category principally covers trading book positions.
- “Revocable and irrevocable lending commitments” consist of the undrawn portion of revocable and irrevocable lending-related commitments.
- “Contingent liabilities” consist of financial and performance guarantees, standby letters of credit and other similar arrangements (mainly indemnity agreements).
- “OTC derivatives” are our credit exposures from over-the-counter derivative transactions that we have entered into, after netting and cash collateral received. On our balance sheet, these are included in financial assets at fair value through profit or loss or, for derivatives qualifying for hedge accounting, in other assets, in either case, before netting and cash collateral received.

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- “Debt securities” include debentures, bonds, deposits, notes or commercial paper, which are issued for a fixed term and redeemable by the issuer, as reported on our balance sheet within accounting categories at amortized cost and at fair value through other comprehensive income before deduction of allowance for credit losses, it also includes category at fair value through profit and loss. This includes “Traded bonds”, which are bonds, deposits, notes or commercial paper that are bought and held for the purpose of selling them in the near term. From a regulatory perspective the latter category principally covers trading book positions.
- “Repo and repo-style transactions” consist of reverse repurchase transactions, as well as securities or commodities borrowing transactions before application of netting and collateral received.

Although considered in the monitoring of maximum credit exposures, the following are not included in the details of our main credit exposure: brokerage and securities related receivables, cash and central bank balances, interbank balances (without central banks), assets held for sale, accrued interest receivables, traditional securitization positions.

Main Credit Exposure Categories by Business Divisions

in € m.	Dec 31, 2018						
	Loans	Off-balance sheet			OTC derivatives		
	at amortized cost ¹	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI ²	Revocable and irrevocable lending commitments ³	Contingent liabilities	at fair value through P&L ⁴
Corporate & Investment Bank	135,078	11,462	12,532	5,092	168,332	48,871	27,028

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Private & Commercial Bank	269,175	0	209	0	43,331	2,638	353
Asset Management	68	0	0	0	117	14	0
Corporate & Other	216	0	0	0	269	81	37
Total	404,537	11,462	12,741	5,092	212,049	51,605	27,417

in € m.	Dec 31, 2018 Debt Securities			Repo and repo-style transactions ⁷			Total
	at amortized cost ⁵	at fair value through P&L	at fair value through OCI ⁶	at amortized cost ⁸	at fair value through P&L	at fair value through OCI ⁹	
Corporate & Investment Bank	579	88,451	1,032	11,348	64,684	0	574,488
Private & Commercial Bank	4,569	19	7,799	260	0	0	328,353
Asset Management	0	419	0	0	0	0	618
Corporate & Other	51	3,776	36,162	11	4,068	1,097	45,768
Total	5,199	92,664	44,993	11,618	68,752	1,097	949,227

¹ Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 9.1 billion as of December 31, 2018.

² Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 1 million as of December 31, 2018

³ Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 599 million as of December 31, 2018.

⁴ Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

⁵ Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 73 million as of December 31, 2018.

⁶ Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 2 million as of December 31, 2018.

⁷ Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

⁸ Includes stage 3 and stage 3 POCI repo and repo-style transactions at amortized cost amounting to € 0 as of December 31, 2018.

⁹ Includes stage 3 and stage 3 POCI repo and repo-style transactions at fair value through OCI amounting to € 0 as of December 31, 2018.

Dec 31, 2017

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	Loans		Off-balance sheet		OTC derivatives ³	Debt securities		Repo and repo-style transactions	Total
in € m.	Loans ¹	Traded Loans	Irrevocable lending commitments ²	Contingent liabilities	OTC derivatives ³	Debt securities	Traded Bonds	Repo and repo-style transactions	Total
Corporate & Investment Bank	137,954	10,875	141,892	45,342	30,993	2,667	83,067	99,335	552,125
Private & Commercial Bank	267,554	1	16,201	2,802	422	14,421	0	835	302,235
Asset Management	87	0	53	16	0	39	67	0	262
Corporate & Other	26	0	107	52	15	31,124	4,130	4,630	40,084
Total	405,621	10,876	158,253	48,212	31,430	48,251	87,264	104,800	894,707

¹Includes impaired loans amounting to € 6.2 billion as of December 31, 2017.

²Includes irrevocable lending commitments related to consumer credit exposure of € 10.1 billion as of December 31, 2017.

³Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

⁴ I ncludes debt securities on financial assets available for sale and securities held to maturity.

⁵ Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

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For 2018, we provide information following the IFRS 9 accounting standard, while 2017 numbers are based on the IAS 39 accounting rules and are presented in the old format. Since the accounting requirements have changed significantly, numbers are not comparable. For further information please refer to chapter “IFRS 9 Transition Impact Analysis” in Note 2 “Recently Adopted and New Accounting Pronouncements” to the consolidated financial statement.

Our main credit exposure increased by € 54.5 billion.

- From a divisional perspective, increases in exposure are observed across all divisions. Details in respect of Corporate & Investment Bank and Private & Commercial Bank credit exposures are provided in subsequent sections. Corporate & Other primarily comprises of Treasury exposures.
- From a product perspective, significant increases in exposure have been observed on account of first time inclusion of Revocable commitments and inclusion of all Loan categories both part of the IFRS 9 introduction. This Increase has been partially offset by decrease on repos due to managed reduction.

Main Credit Exposure Categories by Industry Sectors

Main Credit Exposure Categories

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Dec 31, 2018

in € m.	Loans				Off-balance sheet		OTC derivatives
	at amortized cost ¹	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI ²	Revocable and irrevocable lending commitments ³	Contingent liabilities	at fair value through P&L ⁴
Agriculture, forestry and fishing	640	15	0	0	541	40	5
Mining and quarrying	2,995	563	0	141	6,094	1,505	210
Manufacturing	28,342	786	7	1,831	45,296	11,985	1,378
Electricity, gas, steam and air conditioning supply	3,210	284	57	3	4,908	1,563	452
Water supply, sewerage, waste management and remediation activities	867	28	0	0	399	155	181
Construction	3,902	495	0	25	3,638	2,089	338
Wholesale and retail trade, repair of motor vehicles and motorcycles	20,293	488	215	875	14,380	5,058	317
Transport and storage	5,774	647	48	79	5,059	920	1,017
Accommodation and food service activities	2,026	40	0	28	1,761	195	158
Information and communication	4,372	505	29	374	17,277	2,061	793
Financial and insurance activities	77,628	3,530	11,845	882	62,739	22,191	17,415
Real estate activities	33,432	1,538	88	95	5,375	221	1,084
Professional, scientific and technical activities	6,590	239	0	190	4,172	1,708	47
Administrative and support service activities	7,381	338	169	34	4,835	451	628
Public administration and defense, compulsory social security	8,917	1,160	203	472	978	48	2,088
Education	698	1	0	0	76	18	362
Human health services and social work activities	3,483	104	0	31	1,862	124	239
	859	71	0	21	873	38	13

Arts, entertainment and recreation							
Other service activities	4,720	520	77	10	2,406	708	157
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	188,407	85	2	0	29,372	522	347
Activities of extraterritorial organizations and bodies	1	25	0	0	7	6	188
Total	404,537	11,462	12,741	5,092	212,049	51,605	27,417

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in € m.	Dec 31, 2018						Total
	Debt Securities			Repo and repo-style transactions ⁷			
	at amortized cost ⁵	at fair value through P&L	at fair value through OCI ⁶	at amortized cost ⁸	at fair value through P&L	at fair value through OCI ⁹	
Agriculture, forestry and fishing	0	9	0	0	0	0	1,251
Mining and quarrying	119	481	5	0	0	0	12,113
Manufacturing	472	1,245	47	0	0	0	91,389
Electricity, gas, steam and air conditioning supply	374	631	45	0	0	0	11,527
Water supply, sewerage, waste management and remediation activities	5	36	0	0	0	0	1,670
Construction	35	585	59	0	0	0	11,165
Wholesale and retail trade, repair of motor vehicles and motorcycles	87	224	1	0	0	0	41,938
Transport and storage	100	608	55	0	0	0	14,308
Accommodation and food service activities	21	25	0	0	0	0	4,254
Information and communication	168	724	505	0	0	0	26,810
Financial and insurance activities	2,771	18,102	16,219	10,668	66,949	1,097	312,035
Real estate activities	84	1,928	23	6	28	0	43,903
	23	306	0	0	0	0	13,275

Professional, scientific and technical activities							
Administrative and support service activities	38	160	0	434	131	0	14,599
Public administration and defense, compulsory social security	797	63,468	27,892	510	1,631	0	108,165
Education	0	121	0	0	0	0	1,275
Human health services and social work activities	0	474	63	0	0	0	6,381
Arts, entertainment and recreation	0	398	0	0	0	0	2,273
Other service activities	43	2,691	26	0	13	0	11,371
Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use	0	0	0	0	0	0	218,735
Activities of extraterritorial organizations and bodies	62	448	54	0	0	0	790
Total	5,199	92,664	44,993	11,618	68,752	1,097	949,227

¹ Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 9.1 billion as of December 31, 2018.

² Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 1 million as of December 31, 2018

³ Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 599 million as of December 31, 2018.

⁴ Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

⁵ Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 73 million as of December 31, 2018.

⁶ Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 2 million as of December 31, 2018.

⁷ Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

⁸ Includes stage 3 and stage 3 POCI repo and repo-style transactions at amortized cost amounting to € 0 as of December 31, 2018.

⁹ Includes stage 3 and stage 3 POCI repo and repo-style transactions at fair value through OCI amounting to € 0 as of December 31, 2018.

Dec 31, 2017				
Loans	Off-balance sheet		Debt securities	Total
Main Credit Exposure Categories				273

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in € m.	Loans ¹	Traded Loans	Irrevocable lending commit- ments ²	Contingent liabilities	OTC derivatives ³		Traded Bonds	Repo and repo-style transactions		Total
					OTC derivatives ³	Debt securities ⁴		Repo and repo-style transactions ⁵		
Financial intermediation	52,087	1,635	31,839	9,407	17,991	15,590	16,982	100,006		245,536
Fund management activities	18,668	306	6,213	173	1,232	53	737	44		27,426
Manufacturing	27,569	628	38,450	14,893	1,347	294	1,991	0		85,172
Wholesale and retail trade	19,246	388	10,684	5,623	413	50	501	0		36,905
Households	186,687	74	9,975	671	398	0	0	0		197,805
Commercial real estate activities	29,180	2,080	4,343	508	1,185	1	1,468	41		38,806
Public sector	13,510	611	844	138	3,510	30,301	54,989	4,694		108,597
Other ⁶	58,674	5,154	55,904	16,799	5,353	1,963	10,596	16		154,459
Total	405,621	10,876	158,253	48,212	31,430	48,251	87,264	104,800		894,707

¹Includes impaired loans amounting to € 6.2 billion as of December 31, 2017.

²Includes irrevocable lending commitments related to consumer credit exposure of € 10.1 billion as of December 31, 2017.

³Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

⁴Includes debt securities on financial assets available for sale and securities held to maturity.

⁵Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

⁶Major industries within Other were: Real estate other than commercial (€ 63.4 billion), Transport; storage and communication (€ 28.2 billion), Other community and personal social services (€ 14.1 billion), Electricity; gas and water supply (€ 12.8 billion), Construction (€ 11.7 billion) and Mining and quarrying (€ 10.0 billion).

The above tables give an overview of our credit exposure by industry, allocated based on the NACE code of the counterparty. NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) is a standard European industry classification system. The 2018 table provides further breakdown on industry to increase the transparency.

The portfolio is subject to the same credit underwriting requirements stipulated in our “Principles for Managing Credit Risk”, including various controls according to single name, country, industry and product-specific concentration.

Material transactions, such as loans underwritten with the intention to syndicate, are subject to review by senior credit risk management professionals and (depending upon size) an underwriting credit committee and/or the Management

Board. High emphasis is placed on structuring such transactions so that de-risking is achieved in a timely and cost-effective manner. Exposures within these categories are mostly to good quality borrowers and also subject to further risk mitigation as outlined in the description of our Credit Portfolio Strategies Group's activities.

Our household loans exposure is principally associated with our Private & Commercial Bank portfolios.

Our commercial real estate loans, primarily in the U.S. and Europe, are generally secured by first mortgages on the underlying real estate property. Credit underwriting policy guidelines provide that LTV ratios of generally less than 75 % are maintained. Additionally, given the significance of the underlying collateral independent external appraisals are commissioned for all secured loans by a valuation team (part of the independent Credit Risk Management function) which is also responsible for reviewing and challenging the reported real estate values regularly.

The Commercial Real Estate Group only in exceptional cases retains mezzanine or other junior tranches of debt (although we do underwrite mezzanine loans). Loans originated for distribution are carefully monitored under a pipeline limit. Securitized loan positions are entirely sold (except where regulation requires retention of economic risk), while we frequently retain a portion of syndicated bank loans. This hold portfolio is also subject to the aforementioned principles and policy guidelines. We also participate in conservatively underwritten unsecured lines of credit to well-capitalized real estate investment trusts and other public companies, which are generally investment-grade. We provide both fixed rate (generally securitized product) and floating rate loans, with interest rate exposure subject to hedging arrangements. In addition, sub-performing and non-performing loans and pools of loans are acquired from other financial institutions at generally substantial discounts to both the notional amounts and current collateral values. The underwriting process for these is stringent and the exposure is managed under separate portfolio limits. Commercial real estate property valuations and rental incomes can be significantly impacted by macro-economic conditions and underlying properties to idiosyncratic events. Accordingly, the portfolio is categorized as higher risk and hence subject to the aforementioned tight restrictions on concentration.

Our credit exposure to our ten largest counterparties accounted for 8 % of our aggregated total credit exposure in these categories as of December 31, 2018 compared with 8 % as of December 31, 2017. Our top ten counterparty exposures were with well-rated counterparties or otherwise related to structured trades which show high levels of risk mitigation.

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Overall credit exposure to the industry sector Financial and Insurance Activities comprise predominantly investment-grade exposures.

Total Loans across all applicable measurement categories amounting to € 93.9 billion, Total Repo and Repo Style transaction across all applicable measurement categories amounting to €78.7 billion and Commitment activities amounting to € 62.7 billion as of December 31, 2018 within Financial and Insurance activities is principally associated with Corporate & Investment Bank Portfolios and are majorly held in North America and Europe region.

The statement on focus industries below follows the Credit Risk Management view on industries, which can differ from the allocation on the basis of NACE codes.

As of December 31, 2018 our loan and contingent liabilities exposure to the focus industry "Shipping & other maritime" has been significantly reduced from € 4.8 billion to € 3.3 billion. Besides the classic ship lending this includes € 0.6 billion for port facilities and yards, € 0.2 billion for traded loan positions and € 0.3 billion for shipping securitizations, an area which was expanded over the year and which accounts for € 0.7 billion of the additional € 1 billion irrevocable undrawn lending commitments. In line with our strategy, the long-term classic ship lending exposure has been significantly de-risked by circa € 1.5 billion to € 2.2 billion as a result of various single ship or loan sales and a portfolio

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loan sale transaction involving € 0.8 billion of underlying loans. Even though the transaction was successfully executed and settled in July 2018, we expect to realize € 0.3 billion loan of reductions from this transaction only in 2019 due to a delayed loan transfer process. The remaining ship lending portfolio shows improved credit metrics resulting in a reduction of risk weighted assets by circa € 1 billion, and continues to benefit from a satisfactory diversification across sectors and client groups. Driven by improving bulker and container markets as well as favorable sales prices, there were overall credit loss provision releases in 2018 and the portfolio will no longer be reported as a focus portfolio.

Main credit exposure categories by geographical region

in € m.	Dec 31, 2018						
	Loans			Off-balance sheet			OTC derivatives
	at amortized cost ¹	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI ²	Revocable and irrevocable lending commitments ³	Contingent liabilities	at fair value through P&L ⁴
Europe	293,979	3,829	9,905	1,785	111,675	31,174	16,390
Of which:							
Germany	207,429	497	304	390	61,587	12,193	1,403
United Kingdom	5,553	671	1,331	278	7,304	3,127	5,766
France	2,415	123	212	81	5,025	2,460	826
Luxembourg	7,543	533	6,920	41	6,682	875	933
Italy	21,363	373	99	0	3,417	3,416	1,174
Netherlands	7,968	125	41	384	9,384	1,470	1,984
Spain	16,729	320	57	67	2,507	3,167	931
Ireland	5,792	230	324	166	3,430	153	772
Switzerland	5,960	31	127	208	3,996	2,419	251
Poland	3,135	0	5	0	301	132	53
Belgium	988	2	53	84	1,986	395	264
Other Europe	9,104	924	431	85	6,057	1,366	2,033
North America	65,716	4,383	2,365	2,311	91,672	9,274	8,011
Of which:							
U.S.	53,195	4,036	2,358	2,209	85,445	8,797	6,196
Cayman Islands	2,562	55	7	0	2,151	17	756
Canada	2,181	48	0	102	2,649	76	828
Other North America	7,778	244	0	0	1,427	384	232
Asia/Pacific	38,176	1,794	471	863	7,052	9,591	2,391
Of which:							
Japan	1,682	37	0	123	334	236	362
Australia	1,224	177	417	11	2,016	135	358

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India	7,355	188	18	3	782	2,061	115
China	4,530	60	0	18	346	1,101	399
Singapore	6,136	238	0	109	1,063	992	192
Hong Kong	4,026	203	0	17	1,023	586	138
Other Asia/Pacific	13,223	893	37	582	1,489	4,480	827
Other geographical areas	6,667	1,456	0	132	1,651	1,566	625
Total	404,537	11,462	12,741	5,092	212,049	51,605	27,417

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	Dec 31, 2018			Repo and repo-style transactions ⁷			Total
	Debt Securities						
in € m.	at amortized cost ⁵	at fair value through P&L	at fair value through OCI ⁶	at amortized cost ⁸	at fair value through P&L	at fair value through OCI ⁹	
Europe	4,467	36,459	24,922	4,394	14,342	316	553,638
Of which:							
Germany	1,443	6,685	9,597	925	899	2	303,352
United Kingdom	182	14,552	2,499	966	4,379	0	46,608
France	714	3,061	1,559	0	3,681	0	20,157
Luxembourg	167	1,332	3,474	89	1,206	0	29,796
Italy	249	2,707	1,146	578	1,040	0	35,563
Netherlands	592	1,785	1,219	0	179	0	25,130
Spain	168	2,146	504	379	529	0	27,504
Ireland	91	920	215	0	1,277	0	13,370
Switzerland	40	560	119	112	316	0	14,139
Poland	0	130	2,387	0	0	0	6,144
Belgium	139	542	481	0	0	0	4,935
Other Europe	682	2,038	1,724	1,344	836	315	26,938
North America	237	34,356	14,491	1,942	45,548	0	280,306
Of which:							
U.S.	220	33,112	13,915	1,275	30,428	0	241,186
Cayman Islands	0	631	9	655	14,094	0	20,937
Canada	0	419	556	0	847	0	7,707
Other North America	17	194	10	12	178	0	10,476
Asia/Pacific	495	19,343	5,037	4,567	8,625	226	98,632
Of which:							
Japan	63	3,142	8	2,752	5,808	0	14,545
Australia	0	3,977	510	19	523	0	9,366

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India	267	2,172	1,849	0	79	61	14,948
China	0	2,124	0	0	614	0	9,192
Singapore	114	1,403	671	0	325	0	11,242
Hong Kong	0	520	222	0	11	0	6,746
Other Asia/Pacific	51	6,006	1,777	1,797	1,266	165	32,594
Other geographical areas	0	2,506	543	714	237	555	16,651
Total	5,199	92,664	44,993	11,618	68,752	1,097	949,227

1Includes stage 3 and stage 3 POCI loans at amortized cost amounting to € 9.1 billion as of December 31, 2018.

2Includes stage 3 and stage 3 POCI loans at fair value through OCI amounting to € 1 million as of December 31, 2018.

3Includes stage 3 and stage 3 POCI off-balance sheet exposure amounting to € 599 million as of December 31, 2018.

4Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

5Includes stage 3 and stage 3 POCI debt securities at amortized cost amounting to € 73 million as of December 31, 2018.

6Includes stage 3 and stage 3 POCI debt securities at fair value through OCI amounting to € 2 million as of December 31, 2018.

7Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

8Includes stage 3 and stage 3 POCI repo and repo-style transactions at amortized cost amounting to € 0 as of December 31, 2018.

9Includes stage 3 and stage 3 POCI repo and repo-style transactions at fair value through OCI amounting to € 0 as of December 31, 2018.

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		Dec 31, 2017								
		Loans		Off-balance sheet		OTC derivatives ³	Debt securities		Repo and repo-style transactions ⁵	Total
in € m.	Loans ¹	Traded Loans	Irrevocable lending commitments ²	Contingent liabilities	OTC derivatives ³	Debt securities ⁴	Traded Bonds	Repo and repo-style transactions ⁵	Total	
Europe	299,937	3,149	65,739	27,574	18,353	35,304	33,120	26,648	509,825	
Of which:										
Germany	199,867	146	27,483	10,739	1,661	12,414	4,912	3,421	260,644	
	6,895	190	5,748	1,514	5,849	864	9,668	10,123	40,851	

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United Kingdom									
France	2,651	242	8,265	1,266	1,231	3,597	3,096	3,442	23,788
Luxembourg	15,983	247	2,858	484	1,102	6,142	1,017	711	28,544
Italy	21,836	497	1,642	3,657	1,750	642	4,167	820	35,012
Netherlands	8,304	493	6,498	1,627	2,292	2,793	2,022	82	24,112
Spain	13,250	227	1,866	3,046	704	946	2,188	987	23,213
Ireland	4,415	272	1,843	481	972	655	1,022	2,673	12,333
Switzerland	6,922	65	2,324	2,488	313	163	644	416	13,336
Poland	7,871	36	807	234	26	1,820	296	0	11,089
Belgium	1,177	12	1,280	405	352	1,574	601	0	5,401
Other Europe	10,765	723	5,124	1,633	2,099	3,696	3,486	3,975	31,500
North America	64,086	5,129	85,358	10,031	10,015	10,986	31,636	56,776	274,017
Of which:									
U.S.	53,795	4,750	80,776	9,489	8,036	10,623	29,972	44,659	242,101
Cayman Islands	2,312	103	1,951	52	700	17	1,041	9,162	15,336
Canada	838	87	1,564	110	1,092	346	272	1,688	5,996
Other North America	7,141	190	1,068	380	187	0	351	1,267	10,584
Asia/Pacific	34,469	1,735	4,447	8,967	2,254	1,025	20,319	19,909	93,126
Of which:									
Japan	1,093	66	276	349	366	15	4,760	10,354	17,278
Australia	1,477	310	1,076	128	277	588	3,716	1,453	9,026
India	7,034	86	717	1,645	219	0	3,973	1,517	15,191
China	4,393	2	378	1,195	263	0	836	3,130	10,198
Singapore	4,946	75	419	794	177	0	927	220	7,559
Hong Kong	4,224	551	385	598	144	2	399	45	6,348
Other Asia/Pacific	11,300	644	1,197	4,259	808	419	5,707	3,190	27,526
Other geographical areas	7,130	862	2,708	1,639	808	936	2,190	1,466	17,739
Total	405,621	10,876	158,253	48,212	31,430	48,251	87,264	104,800	894,707

1Includes impaired loans amounting to € 6.2 billion as of December 31, 2017.

2Includes irrevocable lending commitments related to consumer credit exposure of € 10.1 billion as of December 31, 2017.

3Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

4Includes debt securities on financial assets available for sale and securities held to maturity.

5Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

The above tables give an overview of our credit exposure by geographical region, allocated based on the counterparty's country of domicile, see also section "Credit Exposure to Certain Eurozone Countries" of this report for a detailed discussion of the "country of domicile view".

Our largest concentration of credit risk within loans from a regional perspective is in our home market Germany, with a significant share in households, which includes the majority of our mortgage lending business.

Within OTC derivatives, tradable assets as well as repo and repo-style transactions, our largest concentrations from a regional perspective were in Europe and North America.

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Credit Exposure to Certain Eurozone Countries

Certain Eurozone countries are presented within the table below due to concerns relating to sovereign risk.

In our "country of domicile view" we aggregate credit risk exposures to counterparties by allocating them to the domicile of the primary counterparty, irrespective of any link to other counterparties, or in relation to credit default swaps underlying reference assets from, these Eurozone countries. Hence we also include counterparties whose group parent is located outside of these countries and exposures to special purpose entities whose underlying assets are from entities domiciled in other countries.

The following table, which is based on the country of domicile view, presents our gross position, the included amount thereof of undrawn / contingent exposure and our net exposure to these Eurozone countries. The gross exposure reflects our net credit risk exposure grossed up for net credit derivative protection purchased with underlying reference assets domiciled in one of these countries, guarantees received and collateral. Such collateral is particularly held with respect to the retail portfolio, but also for financial institutions predominantly based on derivative margining arrangements, as well as for corporates. In addition, the amounts also reflect the allowance for credit losses. In some cases, our counterparties' ability to draw on undrawn commitments is limited by terms included in the specific contractual documentation. Net credit exposures are presented after effects of collateral held, guarantees received and further risk mitigation, including net notional amounts of credit derivatives for protection sold/bought. The provided gross and net exposures to certain European countries do not include credit derivative tranches and credit derivatives in relation to our correlation business which, by design, is structured to be credit risk neutral. Additionally, the tranche and correlated nature of these positions does not allow a meaningful disaggregated notional presentation by country, e.g., as identical notional exposures represent different levels of risk for different tranche levels.

Gross position, included undrawn exposure and net exposure to certain Eurozone countries – Country of Domicile View

	Sovereign		Financial Institutions		Corporates		Individuals		Other		Total	
	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018	Dec 31, 2017	Dec 31, 2018 ¹	Dec 31, 2017
in € m.	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018 ¹	2017
Greece												

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Gross	53	55	821	734	406	526	5	5	1	0	1,286	1,320
Undrawn / contingent	0	0	35	30	4	5	1	0	0	0	41	36
Net	35	38	277	270	(5)	8	2	1	1	0	311	317
Ireland												
Gross	418	865	662	927	9,016	7,556	26	31	3,8752	2,2752	13,998	11,654
Undrawn / contingent	0	0	23	4	3,279	2,005	1	0	8022	3162	4,105	2,326
Net	339	717	198	477	6,186	4,420	6	6	3,7772	2,2752	10,506	7,895
Italy												
Gross	3,628	2,875	3,188	3,338	11,893	12,050	18,449	16,489	264	147	37,422	34,898
Undrawn / contingent	1	13	34	28	5,211	5,162	1,790	96	0	0	7,035	5,300
Net	2,538	1,015	634	672	7,864	8,202	9,997	7,633	264	146	21,296	17,669
Portugal												
Gross	(204)	(227)	64	185	888	1,329	14	1,757	27	80	789	3,123
Undrawn / contingent	0	0	32	75	382	374	5	24	0	0	419	474
Net	(122)	(223)	61	115	832	893	7	134	27	80	805	998
Spain												
Gross	1,779	1,672	1,575	1,301	12,597	9,106	9,990	9,570	167	128	26,108	21,777
Undrawn / contingent	0	0	184	225	4,890	4,583	533	259	18	0	5,625	5,068
Net	1,766	1,554	910	552	10,257	7,113	2,668	2,117	256	128	15,857	11,464
Total gross	5,674	5,240	6,310	6,485	34,800	30,566	28,484	27,851	4,335	2,629	79,603	72,771
Total												
Undrawn / contingent	1	14	307	364	13,767	12,130	2,331	380	819	316	17,225	13,203
Total net ³	4,555	3,102	2,080	2,086	25,134	20,637	12,680	9,891	4,325	2,629	48,775	38,344

1 Approximately 75 % of the overall exposure as per December 31, 2018 will mature within the next 5 years.

2 Other exposures to Ireland include exposures to counterparties where the domicile of the group parent is located outside of Ireland as well as exposures to special purpose entities whose underlying assets are from entities domiciled in other countries.

3 Total net exposure excludes credit valuation reserves for derivatives amounting to € 86.3 million as of December 31, 2018 and € 64.6 million as of December 31, 2017.

4 Revocable commitments not included in the year were € 2.5 billion.

Net exposure to the above selected Eurozone countries increased by € 10.4 billion in 2018 driven by increased exposure in Spain, Italy and Ireland. Further, movement of € 2.5 billion in net exposure is due to first time inclusion of revocable loan commitments as part of the IFRS 9 introduction.

Sovereign Credit Risk Exposure to Certain Eurozone Countries

The amounts below reflect a net “country of domicile view” of our sovereign exposure.

Sovereign credit risk exposure to certain Eurozone countries

in € m.	Dec 31, 2018			Memo Item: Net fair value of CDS referencing sovereign debt ²	Dec 31, 2017			Memo Item: Net fair value of CDS referencing sovereign debt ²
	Direct Sovereign exposure ¹	Net Notional of CDS referencing sovereign debt	Net sovereign exposure		Direct Sovereign exposure ¹	Net Notional of CDS referencing sovereign debt	Net sovereign exposure	
Greece	53	(18)	35	0	55	(17)	38	0
Ireland	334	5	339	(0)	709	9	717	0
Italy	3,627	(1,089)	2,538	58	2,834	(1,818)	1,016	49
Portugal	(204)	82	(122)	5	(227)	3	(223)	0
Spain	1,773	(8)	1,766	27	1,669	(115)	1,554	35
Total	5,583	(1,028)	4,555	90	5,040	(1,938)	3,102	84

¹Includes sovereign debt classified as financial assets/liabilities at fair value through profit or loss, available for sale (December 2017) and loans carried at amortized cost. Direct Sovereign exposure is net of guarantees received and collateral.

²The amounts reflect the net fair value in relation to credit default swaps referencing sovereign debt of the respective country representing the counterparty credit risk.

The increase of € 1.5 billion in net sovereign exposure compared with year-end 2017 mainly reflects increases in debt securities in Italy.

Credit Exposure Classification

We also classify our credit exposure along our business divisions, which is in line with the Business Aligned Risk Management split within the Risk function: Corporate & Investment Bank (CIB) credit exposure and Private & Commercial Bank (PCB) credit exposure.

- Our CIB credit exposure consists of all credit exposure arising from loan, off-balance sheet, derivatives, debt securities or repo transactions in our Corporate & Investment Bank division.
- Our PCB credit exposure consists of all credit exposure in our Private & Commercial Bank division, predominantly from loans and off-balance sheet exposures.

For 2018, we provide updated information following the split along business divisions, while numbers for 2017 are based on the historically applied split of the portfolio into Consumer credit exposure (consisting of smaller-balance standardized homogeneous loans) and Corporate credit exposure (all remaining exposures). Furthermore, we have enhanced our reporting by now including all exposures in our Main Credit Exposure Categories in this section. Numbers are therefore not comparable.

CIB Credit Exposure

The tables below show our CIB Credit Exposure by product types and internal rating bands. Please refer to section "Measuring Credit Risk" for more details about our internal ratings.

Main CIB credit exposure categories according to our internal creditworthiness categories of our counterparties – gross

		Dec 31, 2018						
in € m. (unless stated otherwise)		Loans			Off-balance sheet			OTC derivatives
Ratingband	Probability of default in %1	at amortized cost	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI	Revocable and irrevocable lending commitments	Contingent liabilities	at fair value through P&L2
iAAA-iAA	> 0.00 ≤ 0.04	12,632	25	7,879	164	20,043	4,398	9,926
iA	> 0.04 ≤ 0.11	29,455	266	518	775	44,927	10,104	7,113
iBBB	> 0.11 ≤ 0.5	29,761	1,061	519	2,734	54,477	23,743	5,789
iBB	> 0.5 ≤ 2.27	31,393	5,384	1,587	1,333	27,754	5,888	3,006
iB	> 2.27 ≤ 10.22	19,828	3,522	1,665	84	16,263	3,504	996
iCCC and below	> 10.22 ≤ 100	12,009	1,204	364	1	4,868	1,234	197
Total		135,078	11,462	12,532	5,092	168,332	48,871	27,028

		Dec 31, 2018						
in € m. (unless stated otherwise)		Debt Securities			Repo and repo-style transactions			Total
Ratingband	Probability of default in %1	at amortized cost	at fair value through P&L	at fair value through OCI	at amortized cost	at fair value through P&L	at fair value through OCI	Total
iAAA-iAA	> 0.00 ≤ 0.04	87	54,365	8	2,929	33,339	0	145,795
iA	> 0.04 ≤ 0.11	38	6,885	122	1,279	9,967	0	111,448
iBBB	> 0.11 ≤ 0.5	112	8,686	114	275	6,190	0	133,459
iBB	> 0.5 ≤ 2.27	189	16,657	639	3,775	14,236	0	111,841
iB	> 2.27 ≤ 10.22	105	1,365	149	2,704	891	0	51,078
iCCC and below	> 10.22 ≤ 100	49	492	0	387	61	0	20,867
Total		579	88,451	1,032	11,348	64,684	0	574,488

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1Reflects the probability of default for a one year time horizon.

2Includes the effect of netting agreements and cash collateral received where applicable.

Main CIB credit exposure categories according to our internal creditworthiness categories of our counterparties – net

		Dec 31, 2018 ¹						
in € m. (unless stated otherwise)		Loans			Off-balance sheet			OTC derivatives
Ratingband	Probability of default in % ²	at amortized cost	trading - at fair value through P&L	Designated / mandatory at fair value through P&L	at fair value through OCI	Revocable and irrevocable lending commitments	Contingent liabilities	at fair value through P&L
iAAA–iAA	> 0.00 ≤ 0.04	10,064	25	7,755	164	18,804	3,872	3,890
iA	> 0.04 ≤ 0.11	25,535	266	518	775	43,491	8,444	3,292
iBBB	> 0.11 ≤ 0.5	22,151	729	518	2,641	52,159	21,321	3,637
iBB	> 0.5 ≤ 2.27	18,076	4,066	1,018	1,302	26,568	4,630	2,351
iB	> 2.27 ≤ 10.22	6,434	2,880	655	9	15,083	2,262	776
iCCC and below	> 10.22 ≤ 100	3,571	1,049	364	1	4,172	701	69
Total		85,831	9,014	10,828	4,892	160,277	41,229	14,015

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		Dec 31, 2018 ¹						
in € m. (unless stated otherwise)		Debt Securities			Repo and repo-style transactions			
Ratingband	Probability of default in % ²	at amortized cost	at fair value through P&L	at fair value through OCI	at amortized cost	at fair value through P&L	at fair value through OCI	Total
iAAA–iAA	> 0.00 ≤ 0.04	87	54,365	8	1,863	359	0	101,256
iA	> 0.04 ≤ 0.11	38	6,885	122	51	269	0	89,686
iBBB	> 0.11 ≤ 0.5	112	8,686	114	115	112	0	112,294
iBB	> 0.5 ≤ 2.27	132	16,519	640	1,331	602	0	77,236
iB	> 2.27 ≤ 10.22	105	1,365	150	0	25	0	29,742
iCCC and below	> 10.22 ≤ 100	49	492	0	367	0	0	10,837
Total		523	88,313	1,033	3,728	1,367	0	421,050

1Net of eligible collateral, guarantees and hedges based on IFRS requirements.

2Reflects the probability of default for a one year time horizon.

Corporate Credit Exposure

The tables below show our Corporate Credit Exposure for 2017 by product types and internal rating bands.

Main corporate credit exposure categories according to our internal creditworthiness categories of our counterparties – gross

in € m. (unless stated otherwise)

Dec 31, 2017

Ratingband	Probability of default in % ¹	Loans	Irrevocable lending commitments ²	Contingent liabilities	OTC derivatives ³	Debt securities ⁴	Total
iAAA–iAA	> 0.00 ≤ 0.04	38,743	18,643	5,108	13,025	39,405	114,924
iA	> 0.04 ≤ 0.11	39,428	44,388	13,899	8,416	6,277	112,407
iBBB	> 0.11 ≤ 0.5	56,245	51,021	16,165	5,204	2,174	130,809
iBB	> 0.5 ≤ 2.27	41,888	25,652	7,882	3,390	371	79,183
iB	> 2.27 ≤ 10.22	23,556	15,286	3,434	1,174	5	43,456
iCCC and below	> 10.22 ≤ 100	13,688	3,264	1,723	220	19	18,913
Total		213,547	158,253	48,212	31,430	48,251	499,693

1Reflects the probability of default for a one year time horizon.

2Includes irrevocable lending commitments related to consumer credit exposure of € 10.1 billion as of December 31, 2017.

3Includes the effect of netting agreements and cash collateral received where applicable.

4Includes debt securities on financial assets available for sale and securities held to maturity.

Main corporate credit exposure categories according to our internal creditworthiness categories of our counterparties – net

in € m. (unless stated otherwise)

Dec 31, 2017¹

Rating band	Probability of default in % ²	Loans	Irrevocable lending commitments	Contingent liabilities	OTC derivatives	Debt securities	Total
iAAA–iAA	> 0.00 ≤ 0.04	27,580	18,281	4,272	7,370	39,405	96,907
iA	> 0.04 ≤ 0.11	25,355	42,104	11,882	6,528	6,277	92,146
iBBB	> 0.11 ≤ 0.5	32,131	49,095	13,461	4,490	2,174	101,351
iBB	> 0.5 ≤ 2.27	18,845	24,056	5,267	2,506	371	51,046
iB	> 2.27 ≤ 10.22	8,306	14,130	2,097	1,106	5	25,645

iCCC and below	> 10.22 ≤ 100	4,157	2,540	629	216	15	7,557
Total		116,374	150,206	37,608	22,216	48,247	374,652

¹Net of eligible collateral, guarantees and hedges based on IFRS requirements.

²Reflects the probability of default for a one year time horizon.

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CPSG Risk Mitigation for the CIB Credit Exposure

Our Credit Portfolio Strategies Group (“CPSG”) helps mitigate the risk of our corporate credit exposures. The notional amount of CPSG’s risk reduction activities decreased from € 32.7 billion as of December 31, 2017, to € 31.1 billion as of December 31, 2018.

As of year-end 2018, CPSG mitigated the credit risk of € 30.9 billion of loans and lending-related commitments, through synthetic collateralized loan obligations supported predominantly by financial guarantees. This position totaled € 32 billion as of December 31, 2017.

CPSG also held credit derivatives with an underlying notional amount of € 0.2 billion as of December 31, 2018. The position totaled € 0.7 billion as of December 31, 2017. The credit derivatives used for our portfolio management activities are accounted for at fair value.

PCB credit exposure

PCB credit exposure, credit exposure stage 3 and net credit costs

	Total exposure in € m. Dec 31, 2018	of which loan book in € m. Dec 31, 2018	Credit exposure stage 3 in € m. Dec 31, 2018	Net credit costs as a % of total exposure ¹ Dec 31, 2018
PCB Germany (excl. WM)	242,277	195,435	2,737	0.09%
Consumer Finance	33,392	16,029	905	0.66%
Mortgage	153,040	143,985	1,397	(0.01%)
Business Finance	28,039	20,582	357	0.14%
Commercial Mortgage	10,102	9,660	67	(0.09%)
Financial Markets	17,099	4,574	10	(0.01%)
Other	605	605	0	0%
PCC International	38,598	34,119	1,825	0.44%
Consumer Finance	11,056	8,342	381	0.86%
Mortgage	17,419	17,333	835	0%
Business Finance	9,119	8,400	608	0.82%
Other	1,005	44	2	0%

Wealth Management	47,479	39,830	853	0.02%
Total PCB credit exposure	328,353	269,384	5,415	0.12%

¹ Net credit costs for the twelve months period ended at the respective balance sheet date divided by the total exposure at that balance sheet date.

The tables below presents our Consumer Credit Exposure for 2017.

Consumer credit exposure, consumer loan delinquencies and net credit costs

	Total exposure in € m. ¹ Dec 31, 2017 ³	90 days or more past due as a % of total exposure ¹ Dec 31, 2017 ³	Net credit costs as a % of total exposure ² Dec 31, 2017 ³
Consumer credit exposure Germany:	153,728	0.73	0.12
Consumer and small business financing	21,224	2.96	1.07
Mortgage lending	132,505	0.37	(0.03)
Consumer credit exposure outside Germany	38,345	3.77	0.39
Consumer and small business financing	15,298	6.54	0.78
Mortgage lending	23,047	1.93	0.12
Total consumer credit exposure	192,074	1.34	0.17

¹ Includes impaired loans amounting to € 2.8 billion as of December 31, 2017

² Net credit costs for the twelve months period ended at the respective balance sheet date divided by the exposure at that balance sheet date.

³ Total Exposure above represents Loans at amortized cost basis IAS 39 accounting rules applicable on December 31, 2017.

Consumer finance is divided into personal instalment loans, credit lines and credit cards. Consumer finance business is uncollateralized, loan risk depends on client quality. Various lending requirements are stipulated, including (but not limited to) client rating, maximum loan amounts and maximum tenors, and are adapted to regional conditions and/or circumstances of the borrower (i.e., for consumer loans a maximum loan amount taking into account customer net income). Given the largely homogeneous nature of this portfolio, counterparty credit-worthiness and ratings are predominately derived by utilizing an automated decision engine.

Mortgage business is principally the financing of owner-occupied residential properties (minor focus on buy-to-let and commercial properties) sold by various business channels in Europe, primarily in Germany but also in Spain and Italy. The level of credit risk of the mortgage loan portfolio is determined by assessing the quality of the client and the underlying collateral. The loan amounts are generally larger than consumer finance loans and they are extended for

longer time horizons. Based on our underwriting criteria and processes and the diversified portfolio (customers/properties) with low loan-to-value (LTV) ratios, the mortgage portfolio is categorized as lower risk, while consumer finance is categorized as medium risk.

Business finance represents credit products for small businesses, SME up to large corporates. Products range from current accounts and credit lines to investment loans or revolving facilities, factoring and leasing. Smaller clients below a turnover of € 2.5 million are limited to current accounts and loans. Clients are located primarily in Germany, but credit can also be extended to subsidiaries abroad, mostly in Europe. The debtors of factoring clients may be located worldwide. The respective credit exposure is usually insured through Hermes guarantees or trade insurance.

Commercial mortgage business is the financing of commercial properties, mostly office, retail, hotels and residential properties. Financing is made via SPV, through investment funds or directly. Focus locations are prime real estate locations primarily in Western Europe with Germany as the most important market.

Financial Market represents treasury investments in corporates, banks and financial institutions as well as sovereigns. Products are mostly covered and uncovered bonds, in loan exposure the majority represents Bundesbank exposure as well as loans to German sub-sovereigns and public institutions.

The Wealth Management Business Unit offers customized wealth management solutions and private banking services including discretionary portfolio management and traditional and alternative investment solutions, complemented by structured risk management, wealth planning, lending and family office services for wealth, high-net-worth (HNW) and ultra-high-net-worth (UHNW) individuals and family offices. Wealth Management's total exposure is divided into Lombard Lending (against readily marketable liquid collateral / securities) and Structured Lending (against less liquid collateral). While the level of credit risk for the Lombard portfolio is determined by assessing the quality of the underlying collateral, the level of credit risk for the Structured portfolio is determined by assessing both the quality of the client and the collateral. Products range from secured lombard and mortgage loans to current accounts (Europe only), credit lines and other loans; to a lesser extent derivatives and contingencies. Clients are located globally.

According to the new scope of this chapter, the loan to value for December 2018 is calculated for the PCB mortgage portfolio instead of the consumer mortgage portfolio.

PCB mortgage loan-to-value ¹

	Dec 31, 2018
≤ 50 %	67 %
> 50 ≤ 70 %	16 %
> 70 ≤ 90 %	9 %
> 90 ≤ 100 %	3 %
> 100 ≤ 110 %	2 %
> 110 ≤ 130 %	2 %
> 130 %	1 %

¹ When assigning the exposure to the corresponding LTV buckets, the exposure amounts are distributed according to their relative share of the underlying assessed real estate value.

The table below shows the Consumer mortgage lending exposure grouped by loan-to-value buckets for 2017.

Consumer mortgage lending exposure grouped by loan-to-value buckets ¹

Dec 31, 2017

≤ 50 %	68 %
> 50 ≤ 70 %	16 %
> 70 ≤ 90 %	9 %
> 90 ≤ 100 %	3 %
> 100 ≤ 110 %	2 %
> 110 ≤ 130 %	1 %
> 130 %	1 %

1 When assigning the exposure to the corresponding LTV buckets, the exposure amounts are distributed according to their relative share of the underlying assessed real estate value.

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The LTV expresses the amount of exposure as a percentage of the underlying real estate value.

Our LTV ratios are calculated using the total exposure divided by the current determined value of the respective properties. These values are monitored and updated if necessary on a regular basis. The exposure of transactions that are additionally backed by liquid collateral is reduced by the respective collateral values, whereas any prior charges increase the corresponding total exposure. The LTV calculation includes exposure which is secured by real estate collateral. Any mortgage lending exposure that is collateralized exclusively by any other type of collateral is not included in the LTV calculation.

The creditor's creditworthiness, the LTV and the quality of collateral is an integral part of our risk management when originating loans and when monitoring and steering our credit risks. In general, we are willing to accept higher LTV's, the better the creditor's creditworthiness is. Nevertheless, restrictions of LTV apply e.g. for countries with negative economic outlook or expected declines of real estate values.

As of December 31, 2018, 67 % of our exposure related to the mortgage lending portfolio had a LTV ratio below or equal to 50 %, almost unchanged to 68% in the prior year.

Credit Exposure from Derivatives

All exchange traded derivatives are cleared through central counterparties ("CCPs"), the rules and regulations of which provide for daily margining of all current and future credit risk positions emerging out of such transactions. To the extent possible, we also use CCP services for OTC derivative transactions ("OTC clearing"); we thereby benefit from the credit risk mitigation achieved through the CCP's settlement system.

The Dodd-Frank Act provides for an extensive framework for the regulation of OTC derivatives, including mandatory clearing, exchange trading and transaction reporting of certain OTC derivatives, as well as rules regarding the registration of, and capital, margin and business conduct standards for, swap dealers, security-based swap dealers, major swap participants and major security-based swap participants. The Dodd-Frank Act and related CFTC rules introduced in 2013 mandatory OTC clearing in the United States for certain standardized OTC derivative transactions, including certain interest rate swaps and index credit default swaps. The European Regulation (EU) No 648/2012 on OTC Derivatives, Central Counterparties and Trade Repositories ("EMIR") introduced a number of risk mitigation techniques for non-centrally cleared OTC derivatives in 2013 and the reporting of OTC and exchange traded derivatives in 2014. Mandatory clearing for certain standardized OTC derivatives transactions in the EU began in June

2016, and margin requirements for uncleared OTC derivative transactions in the EU started in February 2017. Deutsche Bank implemented the exchange of both initial and variation margin in the EU from February 2017 for the first category of counterparties subject to the EMIR margin for uncleared derivatives requirements. All other in-scope entities followed the variation margin requirements from March 1, 2017. Deutsche Bank further implemented the exchange of initial margin with the second and third categories of counterparties beginning in September 2017 and September 2018, respectively. Initial margin requirements are subject to a phased implementation schedule which will be fully applied by September 2020.

The CFTC adopted final rules in 2016 that require additional interest rate swaps to be cleared, with a phased implementation schedule ending in October 2018. Deutsche Bank implemented the CFTC's expanded clearing requirements for the relevant interest rate swaps subject to the phased compliance, covering identified instruments denominated in AUD, CAD, CHF, HKD, MXN, NOK, PLN, SEK and SGD. In December 2016, also pursuant to the Dodd-Frank Act, the CFTC re-proposed regulations to impose position limits on certain commodities and economically equivalent swaps, futures and options. More recently, in November 2018, the CFTC proposed amendments to the rules that would significantly expand swap mandatory trading requirements. This proposal has not yet been finalized. The Securities and Exchange Commission ("SEC") has also finalized rules regarding registration, reporting, business conduct standards and trade acknowledgement and verification requirements for security-based swap dealers and major security-based swap participants, although these rules will not come into effect until the SEC completes further security-based swap rulemakings. Finally, U.S. prudential regulators (the Federal Reserve, the FDIC, the Office of the Comptroller of the Currency, the Farm Credit Administration and the Federal Housing Finance Agency) have adopted final rules establishing margin requirements for non-cleared swaps and security-based swaps, and the CFTC has adopted final rules establishing margin requirements for non-cleared swaps. The final margin rules follow a phased implementation schedule, with certain initial margin and variation margin requirements in effect as of September 2016 and additional variation margin requirements in effect as of March 1, 2017 for all covered counterparties. Deutsche Bank implemented the exchange of both initial and variation margin for uncleared derivatives in the U.S. from September 2016, for the first category of counterparties subject to the U.S. prudential regulators' margin requirements. Additional initial margin requirements for smaller counterparties are phased in on an annual basis from September 2017 through September 2020, with the relevant compliance dates depending in each case on the transactional volume of the parties and their affiliates. The SEC proposal to establish margin requirements for non-cleared security-based swaps has not yet been finalized.

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The following table shows a breakdown of notional amounts and gross market value of derivative transactions along with a breakdown of notional amounts of OTC derivative assets and liabilities on the basis of clearing channel.

Notional amounts of derivatives on basis of clearing channel and type of derivative

Dec 31, 2018							
Notional amount maturity distribution							
in € m.	Within 1 year	> 1 and ≤ 5 years	After 5 years	Total	Positive market value	Negative market value	Net market value
Interest rate related:							
OTC	12,741,035	9,791,856	5,605,269	28,138,160	202,480	181,453	21,028
Bilateral (Amt)	2,511,405	2,706,991	1,871,607	7,090,004	176,248	156,339	19,909
CCP (Amt)	10,229,630	7,084,865	3,733,661	21,048,156	26,233	25,114	1,119

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Exchange-traded	5,643,533	1,813,582	367	7,457,483	560	357	203
Total Interest rate related	18,384,569	11,605,439	5,605,636	35,595,643	203,040	181,809	21,231
Currency related:							
OTC	4,277,488	1,063,548	440,037	5,781,073	85,221	81,555	3,666
Bilateral (Amt)	4,217,941	1,063,386	440,037	5,721,364	84,592	80,765	3,827
CCP (Amt)	59,547	162	0	59,709	629	790	(161)
Exchange-traded	23,137	0	0	23,137	5	7	(2)
Total Currency related	4,300,625	1,063,548	440,037	5,804,211	85,226	81,562	3,664
Equity/index related:							
OTC	265,587	145,152	16,391	427,130	15,645	19,925	(4,280)
Bilateral (Amt)	265,587	145,152	16,391	427,130	15,645	19,925	(4,280)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	605,254	110,450	10,974	726,678	10,407	9,969	438
Total Equity/index related	870,841	255,602	27,365	1,153,808	26,052	29,894	(3,843)
Credit derivatives related							
OTC	115,256	615,668	123,651	854,575	8,197	8,382	(184)
Bilateral (Amt)	71,996	175,015	49,365	296,375	3,138	3,142	(3)
CCP (Amt)	43,260	440,653	74,287	558,200	5,059	5,240	(181)
Exchange-traded	0	0	0	0	0	0	0
Total Credit derivatives related	115,256	615,668	123,651	854,575	8,197	8,382	(184)
Commodity related:							
OTC	5,028	1,015	1,432	7,476	99	1,090	(991)
Bilateral (Amt)	5,028	1,015	1,432	7,476	99	1,090	(991)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	22,727	1,333	0	24,060	246	289	(43)
Total Commodity related	27,755	2,348	1,432	31,535	345	1,379	(1,034)
Other:							
OTC	11,854	2,555	86	14,494	213	337	(124)
Bilateral (Amt)	11,853	2,555	86	14,493	213	336	(124)
CCP (Amt)	1	0	0	1	0	0	0
Exchange-traded	5,244	3	0	5,247	13	46	(33)
Total Other	17,098	2,558	86	19,741	226	383	(157)
Total OTC business	17,416,248	11,619,795	6,186,866	35,222,909	311,855	292,741	19,115
Total bilateral business	7,083,810	4,094,114	2,378,919	13,556,843	279,935	261,597	18,338
Total CCP business	10,332,438	7,525,680	3,807,948	21,666,066	31,921	31,144	777
Total exchange-traded business	6,299,896	1,925,368	11,341	8,236,605	11,231	10,668	563
Total	23,716,144	13,545,163	6,198,208	43,459,514	323,086	303,409	19,678
Positive market values after netting and cash	0	0	0	0	29,393	0	0

collateral received

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Dec 31, 2017

Notional amount maturity distribution

in € m.	Within 1 year	> 1 and ≤ 5 years	After 5 years	Total	Positive market value	Negative market value	Net market value
Interest rate related:							
OTC	18,389,853	9,644,152	5,862,868	33,896,874	224,783	202,492	22,291
Bilateral (Amt)	2,231,176	2,624,101	1,989,543	6,844,820	200,520	177,989	22,532
CCP (Amt)	16,158,677	7,020,051	3,873,326	27,052,054	24,262	24,503	(241)
Exchange-traded	4,100,955	1,379,528	155	5,480,638	250	275	(25)
Total Interest rate related	22,490,809	11,023,680	5,863,023	39,377,512	225,033	202,767	22,266
Currency related:							
OTC	4,265,081	1,036,897	470,541	5,772,518	82,392	75,535	6,858
Bilateral (Amt)	4,209,509	1,036,536	470,541	5,716,586	81,597	74,823	6,774
CCP (Amt)	55,572	361	0	55,932	795	712	83
Exchange-traded	48,252	0	0	48,252	19	18	1
Total Currency related	4,313,333	1,036,897	470,541	5,820,771	82,411	75,553	6,859
Equity/index related:							
OTC	301,662	156,272	19,248	477,182	18,201	23,010	(4,810)
Bilateral (Amt)	301,662	156,272	19,248	477,182	18,201	23,010	(4,810)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	732,870	107,631	5,398	845,900	9,986	12,708	(2,722)
Total Equity/index related	1,034,533	263,903	24,647	1,323,082	28,187	35,718	(7,531)
Credit derivatives related							
OTC	209,376	1,321,066	153,867	1,684,309	28,317	27,888	429
Bilateral (Amt)	91,919	204,583	49,442	345,944	5,363	4,779	584
CCP (Amt)	117,457	1,116,482	104,426	1,338,365	22,954	23,108	(154)
Exchange-traded	0	0	0	0	0	0	0
Total Credit derivatives related	209,376	1,321,066	153,867	1,684,309	28,317	27,888	429
Commodity related:							
OTC	3,431	995	2,015	6,441	35	1,485	(1,449)
Bilateral (Amt)	3,431	995	2,015	6,441	35	1,485	(1,449)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	39,955	4,163	0	44,119	187	214	(27)
Total Commodity related	43,386	5,158	2,015	50,560	222	1,699	(1,476)
Other:							

OTC	3,744	765	0	4,509	9	371	(362)
Bilateral (Amt)	3,744	765	0	4,509	9	371	(362)
CCP (Amt)	0	0	0	0	0	0	0
Exchange-traded	5,196	1	0	5,197	5	26	(20)
Total Other	8,940	766	0	9,706	14	397	(382)
Total OTC business	23,173,146	12,160,146	6,508,540	41,841,833	353,737	330,780	22,957
Total bilateral business	6,841,441	4,023,253	2,530,789	13,395,482	305,726	282,457	23,269
Total CCP business	16,331,705	8,136,894	3,977,751	28,446,351	48,012	48,324	(312)
Total exchange-traded business	4,927,230	1,491,323	5,553	6,424,106	10,447	13,240	(2,793)
Total	28,100,376	13,651,470	6,514,093	48,265,939	364,185	344,020	20,164
Positive market values after netting and cash collateral received	0	0	0	0	32,083	0	0

Equity Exposure

The table below presents the carrying values of our equity investments according to IFRS definition split by trading and nontrading for the respective reporting dates. We manage our respective positions within our market risk and other appropriate risk frameworks.

Composition of our Equity Exposure

in € m.	Dec 31, 2018	Dec 31, 2017
Trading Equities	56,673	85,932
Nontrading Equities ¹	2,835	2,496
Total Equity Exposure	59,507	88,427

¹Includes equity investment funds amounting to € 605 million as of December 31, 2018 and € 367 million as of December 31, 2017.

As of December 31, 2018, our Trading Equities exposure was mainly composed of € 54.3 billion from Corporate & Investment Bank activities and € 2.3 billion from Asset Management. Overall trading equities decreased by € 29.3 billion year on year driven mainly by decreased exposure in Corporate & Investment Bank activities.

Asset Quality

For 2018, we provide information following the IFRS 9 accounting standard, while 2017 numbers are based on the IAS 39 accounting rules. Since the accounting requirements have changed significantly, numbers are not comparable. Therefore 2017 figures are shown in a separate section subsequent to the disclosures under IFRS 9. The main reasons are the broader scope of assets subject to impairment, differences in asset classification as well as in impairment calculation and definition:

The Asset Quality section under IFRS 9 describes the quality of debt instruments subject to impairment, which under IFRS 9 consist of debt instruments measured at amortized cost, financial instruments at fair value through other

comprehensive income (FVOCI) as well as off-balance sheet lending commitments such as loan commitments and financial guarantees (hereafter collectively referred to as “Financial Assets”). Under IAS 39 the Asset Quality section mainly described the quality of the group Loans measured at amortized costs classified as Loans in our balance sheet.

The determination of impairment losses and allowance moves from an incurred credit loss model under IAS 39, whereby credit losses are recognized when a defined loss event occurs, to an expected credit loss model under IFRS 9, where allowances for loan losses are recorded upon initial recognition of the Financial Asset, based on expectations of potential credit losses at the time of initial recognition.

The Group has aligned its definition of “credit-impaired” under IFRS 9 to the default definition as per Art. 178 of the Capital Requirements Regulation (CRR) for regulatory purposes. As a consequence, Stage 3 financial assets consist of two types of defaulted financial assets: firstly financial assets, where the Group expects an impairment loss reflected in an allowance for credit losses, and secondly, financial assets, where the Group does not expect an impairment loss (e.g., due to high quality collateral or sufficient expected future cash flows following thorough due diligence). This is a major difference to our impairment definition under IAS 39, where financial assets were only considered to be impaired if the Group expected to suffer an impairment loss.

For further information please refer to chapter “IFRS 9 Transition Impact Analysis” in Note 2 “Recently Adopted and New Accounting Pronouncements” to the consolidated financial statements.

Overview of financial assets subject to impairment

The following tables provide an overview of the exposure amount and allowance for credit losses by financial asset class broken down into stages as per IFRS 9 requirements.

Overview of financial assets subject to impairment

in € m.	Dec 31, 2018 Gross Carrying Amount					Dec 31, 2018 Allowance for Credit Losses ²				
	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Amortized Cost ¹	637,037	32,335	7,452	1,963	678,787	509	501	3,247	3	4,259

¹ Financial Assets at Amortized Cost consist of: Loans at Amortized Cost, Cash and central bank balances, Interbank balances (w/o central banks), Central bank funds sold and securities purchased under resale agreements, Securities borrowed and certain subcategories of Other assets.

² Allowance for credit losses do not include allowance for country risk amounting to € 6 million as of Dec 31, 2018.

in € m.	Dec 31, 2018 Fair Value					Dec 31, 2018 Allowance for Credit Losses				
	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Fair Value through OCI	50,932	247	2	1	51,182	11	1	0	(0)	13

Dec 31, 2018 Notional Amount					Dec 31, 2018 Allowance for Credit Losses ¹				
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in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Off-balance sheet	252,039	10,021	599	0	262,659	132	73	84	0	289

1 Allowance for credit losses do not include allowance for country risk amounting to € 5 million as of Dec 31, 2018.

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Financial assets at amortized cost

The following tables provide an overview of the gross carrying amount and credit loss allowance by financial asset class broken down into stages as per IFRS 9 requirements.

Development of exposures and allowance for credit losses in the reporting period

in € m.	Dec 31, 2018				
	Gross carrying amount				
	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	663,707	30,305	7,726	2,019	703,756
Movements in financial assets including new business	29,175	5,743	1,058	(61)	35,914
Transfers due to changes in creditworthiness	1,240	(2,344)	1,104	N/M	0
Changes due to modifications that did not result in derecognition	(11)	(8)	(208)	0	(227)
Changes in models	N/M	N/M	N/M	N/M	N/M
Financial assets that have been derecognized during the period	(65,682)	(1,766)	(2,411)	(4)	(69,863)
Recovery of written off amounts	0	0	146	0	146
Foreign exchange and other changes	8,608	405	37	10	9,060
Balance, end of reporting period	637,037	32,335	7,452	1,963	678,787

Financial assets at amortized cost subject to impairment dropped by € 25 billion or 4 % in 2018 mainly driven by Stage 1:

Stage 1 exposures decreased by € 27 billion or 4 % driven by Cash and central bank balances due to reductions in deposits and short-term borrowings.

Stage 2 exposures increased by € 2 billion or 7 % driven by Loans at amortized cost in CIB.

Stage 3 exposures decreased by € 274 million or 4 % in 2018 driven by CIB, mainly reflecting de-risking activities in our shipping portfolio. This reduction was partly offset by an increase in PCB driven by the Postbank business, partly as a result of non-recurring effects.

Dec 31, 2018

Allowance for Credit Losses³

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in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	462	494	3,638	3	4,596
Movements in financial assets including new business	(132)	215	440	(17)	507
Transfers due to changes in creditworthiness	199	(137)	(62)	N/M	0
Changes due to modifications that did not result in derecognition	N/M	N/M	N/M	N/M	N/M
Changes in models	0	0	0	0	0
Financial assets that have been derecognized during the period ²	(6)	(17)	(972)	0	(995)
Recovery of written off amounts	0	0	172	0	172
Foreign exchange and other changes	(14)	(54)	30	17	(21)
Balance, end of reporting period	509	501	3,247	3	4,259
Provision for Credit Losses excluding country risk ¹	66	78	379	(17)	507

1 Movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models add up to Provision for Credit Losses excluding country risk.

2 This position includes charge offs of allowance for credit losses.

3 Allowance for credit losses does not include allowance for country risk amounting to € 6 million as of Dec. 31, 2018.

Allowance for credit losses against financial assets at amortized cost subject to impairment dropped by € 338 million or 7 % in 2018 mainly driven by Stage 3:

Stage 1 allowances increased by € 47 million or 10% driven by additional provisions in CIB to reflect for a weakening macro-economic outlook as well as a one-off adjustment to the calculation methodology on certain loans on which we hold insurance protection.

Stage 2 allowances remained almost stable.

Stage 3 allowances decreased by € 391 million or 11 % driven by CIB, where charge offs partly related to de-risking activities in our shipping portfolio overcompensated additional provisions.

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Financial assets at amortized cost by business division

in € m.	Dec 31, 2018					Allowance for Credit Losses				
	Gross Carrying Amount									
	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Corporate & Investment Bank	327,094	14,241	2,403	1,692	345,429	184	99	896	3	1,183
Private & Commercial Bank	299,003	17,226	5,047	271	321,547	321	400	2,350	0	3,071
Asset Management	1,998	304	2	0	2,303	0	0	0	0	1
Corporate & Other	8,943	564	1	0	9,508	3	1	1	0	5

Financial assets at amortized cost

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Total	637,037	32,335	7,452	1,963	678,787	509	501	3,247	3	4,259
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Financial assets at amortized cost by industry sector

in € m.	Dec 31, 2018									
	Gross Carrying Amount					Allowance for Credit Losses				
	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Agriculture, forestry and fishing	533	38	60	0	631	1	2	21	0	24
Mining and quarrying	2,970	273	147	0	3,390	8	1	5	0	15
Manufacturing	26,695	1,291	783	66	28,836	25	24	449	1	498
Electricity, gas, steam and air conditioning supply	3,476	286	77	0	3,839	3	16	5	0	24
Water supply, sewerage, waste management and remediation activities	777	10	10	0	796	0	0	7	0	7
Construction	3,108	289	338	88	3,823	4	4	244	1	254
Wholesale and retail trade, repair of motor vehicles and motorcycles	19,119	859	593	0	20,572	19	18	403	(0)	440
Transport and storage	4,314	875	539	0	5,728	7	6	201	0	214
Accommodation and food service activities	1,692	166	35	121	2,014	3	2	17	0	23
Information and communication	4,443	286	46	0	4,774	8	13	27	0	48
Financial and insurance activities	318,867	10,526	373	633	330,400	81	33	153	7	274
Real estate activities	33,166	2,801	380	401	36,748	35	17	84	(9)	128
Professional, scientific and technical activities	8,169	498	151	190	9,008	7	8	83	0	98
Administrative and support service activities	7,091	189	62	32	7,374	8	3	19	(4)	25
Public administration and defense, compulsory social security	12,054	1,089	81	1	13,224	4	7	5	0	16
Education	612	19	8	0	638	1	0	7	0	9
Human health services and social work activities	3,246	209	12	2	3,468	7	5	5	0	18
Arts, entertainment and recreation	818	24	14	0	856	2	0	5	0	7
Other service activities	7,788	486	104	239	8,617	9	4	34	4	51
Activities of households as employers, undifferentiated	177,927	12,121	3,639	191	193,878	276	336	1,473	4	2,088

Financial assets at amortized cost

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goods- and services-
producing activities of
households for own use

Activities of extraterritorial organizations and bodies	173	0	1	0	173	0	0	0	0	0
Total	637,037	32,335	7,452	1,963	678,787	509	501	3,247	3	4,259

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Financial assets at amortized cost by region

in € m.	Dec 31, 2018					Dec 31, 2018				
	Gross Carrying Amount					Allowance for Credit Losses				
	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Germany	291,850	12,247	3,088	303	307,488	247	275	1,303	0	1,825
Western Europe (excluding Germany)	119,622	7,499	3,072	1,543	131,736	122	175	1,604	5	1,907
Eastern Europe	6,309	401	88	0	6,798	5	4	38	0	47
North America	147,300	7,572	554	20	155,446	66	32	48	1	147
Central and South America	4,717	558	155	0	5,430	7	2	22	0	31
Asia/Pacific	55,490	3,353	374	98	59,315	32	9	200	(4)	237
Africa	1,996	470	78	0	2,544	7	4	31	0	42
Other	9,753	234	43	0	10,031	22	0	1	0	24
Total	637,037	32,335	7,452	1,963	678,787	509	501	3,247	3	4,259

Financial assets at amortized cost by rating class

in € m.	Dec 31, 2018					Dec 31, 2018				
	Gross Carrying Amount					Allowance for Credit Losses				
	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
iAAA-iAA	235,913	2,315	0	0	238,229	2	0	0	0	3
iA	81,579	3,027	0	0	84,606	6	1	0	0	7
iBBB	138,596	2,508	0	0	141,104	36	8	0	0	43
iBB	137,768	8,318	0	232	146,318	177	61	0	0	238
iB	35,725	10,378	0	11	46,114	239	187	0	0	426
iCCC and below	7,456	5,788	7,452	1,720	22,416	49	243	3,247	3	3,542
Total	637,037	32,335	7,452	1,963	678,787	509	501	3,247	3	4,259

Our existing commitments to lend additional funds to debtors with Stage 3 financial assets at amortized cost amounted to € 117 million as of December 31, 2018.

Collateral held against financial assets at amortized cost in stage 3

	Dec 31, 2018		
in € m.	Gross Carrying Amount	Collateral	Guarantees
Financial Assets at Amortized Cost (Stage 3)	7,452	2,714	221

In 2018, we did not recognize an allowance for credit losses against Financial assets at amortized cost in Stage 3 of € 373 million due to full collateralization of these assets.

Modified Assets at Amortized Cost

A financial asset is considered modified when its contractual cash flows are renegotiated or otherwise modified. Renegotiation or modification may or may not lead to derecognition of the old and recognition of the new financial instrument. This section covers modified financial assets that have not been derecognized.

Under IFRS 9, when the terms of a Financial Asset are renegotiated or modified and the modification does not result in derecognition, a gain or loss is recognized in the income statement as the difference between the original contractual cash flows and the modified cash flows discounted at the original effective interest rate (EIR). For modified financial assets the determination of whether the asset's credit risk has increased significantly reflects the comparison of:

- The remaining lifetime probability of default (PD) at the reporting date based on the modified terms; with
- The remaining lifetime PD estimated based on data at initial recognition and based on the original contractual terms.

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Modified Assets Amortized Cost

	Dec 31, 2018				
in € m.	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Amortized cost carrying amount prior to modification	11	8	222	0	241
Net modification gain/losses recognized	(11)	(8)	(208)	0	(227)

In the first year after the implementation of the IFRS 9 requirements, we have observed immaterial amounts of modified assets that have been upgraded to stage 1. We have not observed any subsequent re-deterioration of those assets into stages 2 and 3.

Financial Assets at Fair value through Other Comprehensive Income

The fair value of financial assets at Fair value through Other Comprehensive Income (FVOCI) subject to impairment was € 51 billion at December 31, 2018, compared to € 48 billion at the beginning of year 2018. Allowance for credit losses against these assets were almost unchanged at very low levels (€ 12 million at the beginning of year 2018 and € 13 million as of December 31, 2018, respectively). Due to immateriality no further breakdown will be provided for financial assets at FVOCI.

Off-balance sheet lending commitments and guarantee business

The following tables provide an overview of the nominal amount and credit loss allowance for our off-balance sheet financial asset class broken down into stages as per IFRS 9 requirements.

Development of nominal amount and allowance for credit losses

in € m.	Dec 31, 2018				
	Nominal Amount				
	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year ¹	243,566	7,114	1,448	0	252,129
Movements including new business	6,765	3,923	(1,191)	0	9,496
Transfers due to changes in creditworthiness	752	(1,089)	338	N/M	0
Changes in models	N/M	N/M	N/M	N/M	N/M
Foreign exchange and other changes	957	73	4	0	1,035
Balance, end of reporting period	252,039	10,021	599	0	262,659

¹ Revocable commitments were included in impairment relevant exposures in Q4 2018. As a consequence, Balance, beginning of year was restated compared to our interim reports 2018.

in € m.	Dec 31, 2018				
	Allowance for Credit Losses ²				
	Stage 1	Stage 2	Stage 3	Stage 3 POCI	Total
Balance, beginning of year	117	36	119	0	272
Movements including new business	(0)	31	(13)	0	18
Transfers due to changes in creditworthiness	2	(0)	(2)	N/M	0
Changes in models	N/M	N/M	N/M	N/M	N/M
Foreign exchange and other changes	14	6	(20)	0	(0)
Balance, end of reporting period	132	73	84	0	289
Provision for Credit Losses excluding country risk ¹	1	31	(15)	0	18

¹ The above table breaks down the impact on provision for credit losses from movements in financial assets including new business, transfers due to changes in creditworthiness and changes in models.

² Allowance for credit losses does not include allowance for country risk amounting to € 5 million as of December 31, 2018.

Legal Claims

Assets subject to enforcement activity consist of assets, which have been fully or partially written off and the Group still continues to pursue recovery of the asset. Such enforcement activity comprises for example cases where the bank continues to devote resources (e.g. our Legal Department/CRM workout unit) towards recovery, either via legal channels or third party recovery agents. Enforcement activity also applies to cases where the Bank maintains outstanding and unsettled legal claims. This is irrespective of whether amounts are expected to be recovered and the recovery timeframe. It may be common practice in certain jurisdictions for recovery cases to span several years.

Amounts outstanding on financial assets that were written off during the reporting period and are still subject to enforcement activity amounted to € 224 million for the year 2018, mainly related to CIB.

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Renegotiated and forbore assets at amortized costs

For economic or legal reasons we might enter into a forbearance agreement with a borrower who faces or will face financial difficulties in order to ease the contractual obligation for a limited period of time. A case-by-case approach is applied for our corporate clients considering each transaction and client -specific facts and circumstances. For consumer loans we offer forbearances for a limited period of time, in which the total or partial outstanding or future instalments are deferred to a later point of time. However, the amount not paid including accrued interest during this period must be re-compensated at a later point of time. Repayment options include distribution over residual tenor, a one-off payment or a tenor extension. Forbearances are restricted and depending on the economic situation of the client, our risk management strategies and the local legislation. In case a forbearance agreement is entered into, an impairment measurement is conducted as described below, an impairment charge is taken if necessary and the loan is subsequently recorded as impaired.

In our management and reporting of forbore assets at amortized costs, we are following the EBA definition for forbearances and non-performing loans (Implementing Technical Standards (ITS) on Supervisory reporting on forbearance and non-performing exposures under article 99(4) of Regulation (EU) No 575/2013). Once the conditions mentioned in the ITS are met, we report the loan as being forbore; we remove the asset from our forbearance reporting, once the discontinuance criteria in the ITS are met (i.e., the contract is considered as performing, a minimum two year probation period has passed, regular payments of more than an insignificant aggregate amount of principal or interest have been made during at least half of the probation period, and none of the exposures to the debtor is more than 30 days past-due at the end of the probation period).

Forborne financial assets at amortized cost

	Dec 31, 2018			Total forbore loans at amortized cost
	Performing Stage 2	Non-performing Stage 2	Stage 3	
in € m.				
German	1,046	49	1,200	2,295
Non-German	741	55	1,750	2,546
Total	1,787	104	2,950	4,841

Development of forbore financial assets at amortized cost

in € m.	Dec 31, 2018
Balance beginning of period	5,089
Classified as forbore during the year	1,679
Transferred to non-forbore during the year (including repayments)	(1,574)
Charge-offs	(386)
Exchange rate and other movements	33
Balance end of period	4,841

The reduction in forborne assets at amortized cost of € 248 million or 5 % was mainly driven by non-performing exposures in CIB mainly reflecting the ongoing de-risking of our shipping portfolio as well as in PCB, among others caused by disposals.

Collateral Obtained

We obtain collateral on the balance sheet only in certain cases by either taking possession of collateral held as security or by calling upon other credit enhancements. Collateral obtained is made available for sale in an orderly fashion or through public auctions, with the proceeds used to repay or reduce outstanding indebtedness. Generally we do not occupy obtained properties for our business use. The commercial and residential real estate collateral obtained in 2018 refers predominantly to our exposures in Spain.

Collateral Obtained during the reporting period

in € m.	2018
Commercial real estate	7
Residential real estate ¹	57
Other	0
Total collateral obtained during the reporting period	64

¹ Carrying amount of foreclosed residential real estate properties amounted to € 62 million as of December 31, 2018 and € 67 million as of December 31, 2017.

The collateral obtained, as shown in the table above, excludes collateral recorded as a result of consolidating securitization trusts under IFRS 10. In 2018 as well as in 2017 the Group did not obtain any collateral related to these trusts.

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Asset Quality (Previous year's figures reported under IAS 39)

This section below describes the asset quality of our loans for the comparative period 2017. All loans where known information about possible credit problems of borrowers causes our management to have serious doubts as to the collectability of the borrower's contractual obligations, are included in this section.

Overview of performing, renegotiated, past due and impaired loans by customer groups

in € m.	Dec 31, 2017		
	Corporate loans	Consumer loans	Total
Loans neither past due, nor renegotiated or impaired	208,457	185,979	394,436
Past due loans, neither renegotiated nor impaired	1,167	2,778	3,945
Loans renegotiated, but not impaired	518	488	1,006
Impaired loans	3,406	2,828	6,234
Total	213,547	192,074	405,621

Past Due Loans

Loans are considered to be past due if contractually agreed payments of principal and/or interest remain unpaid by the borrower, except if those loans are acquired through consolidation. The latter are considered to be past due if payments of principal and/or interest, which were expected at a certain payment date at the time of the initial consolidation of the loans, are unpaid by the borrower.

Non-impaired past due loans at amortized cost by past due status

in € m.	Dec 31, 2017
Loans less than 30 days past due	2,747
Loans 30 or more but less than 60 days past due	482
Loans 60 or more but less than 90 days past due	250
Loans 90 days or more past due	776
Total	4,255

Non-impaired past due loans at amortized cost by industry

in € m.	Dec 31, 2017
Financial intermediation	267
Fund management activities	40
Manufacturing	179
Wholesale and retail trade	233
Households	2,481
Commercial real estate activities	363
Public sector	10
Other	682
Total	4,255

Non-impaired past due loans at amortized cost by region

in € m.	Dec 31, 2017
Germany	1,810
Western Europe (excluding Germany)	1,758
Eastern Europe	158
North America	343
Central and South America	6
Asia/Pacific	161
Africa	19
Other	0
Total	4,255

Our non-impaired past due loans increased to € 4.3 billion as of December 31, 2017, largely caused by loans, that were overdue by a few days. Businesswise, the main driver was PCB.

Aggregated value of collateral – with the fair values of collateral capped at loan outstanding – held against our non-impaired past due loans

in € m.	Dec 31, 2017
Financial and other collateral	2,364
Guarantees received	148
Total	2,512

Renegotiated and forborne loans

The tables below give an overview of the Group's forborne loans.

Forborne loans

	Dec 31, 2017 ¹			
	Performing	Non- performing		Total forborne loans
in € m.	Nonimpaired	Nonimpaired	Impaired	
German	1,183	601	804	2,587
Non-German	612	553	1,337	2,502
Total	1,794	1,154	2,141	5,089

¹ Forborne Loans have been restated following a refinement of internal processes.

Development of forborne loans

in € m.	Dec 31, 2017 ¹
Balance beginning of period	5,468
Classified as forborne during the year	1,492
Transferred to non-forborne during the year (including repayments)	(1,519)
Charge-offs	(234)
Exchange rate and other movements	(119)
Balance end of period	5,089

¹ Balance, end of period as well as Classified as forborne during the year have been restated following a refinement of internal processes.

The total forborne loans in 2017 decreased by € 379 million mainly driven by non-performing forborne loans to non-German clients mainly reflecting non-performing loan sales in our shipping portfolio reported in CIB as well as in PCC International.

Impaired loans

Credit Risk Management regularly assesses at each balance sheet date whether there is objective evidence that a loan or group of loans is impaired. A loan or group of loans is impaired and impairment losses are incurred if:

- there is objective evidence of impairment as a result of a loss event that occurred after the initial recognition of the asset and up to the balance sheet date (a “loss event”). When making our assessment we consider information on such events that is reasonably available up to the date the financial statements are authorized for issuance in line with the requirements of IAS 10;
- the loss event had an impact on the estimated future cash flows of the financial asset or the group of financial assets, and
- a reliable estimate of the loss amount can be made at each reporting date.

Credit Risk Management’s loss assessments are subject to regular review in collaboration with Group Finance. The results of this review are reported to and approved by Group Finance and Risk Senior Management.

For further details with regard to impaired loans please refer to Note 1 “Significant Accounting Policies and Critical Accounting Estimates” to the consolidated financial statements.

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Impairment loss and allowance for loan losses

If there is evidence of impairment the impairment loss is generally calculated on the basis of discounted expected cash flows using the original effective interest rate of the loan. If the terms of a loan are renegotiated or otherwise modified because of financial difficulties of the borrower without qualifying for de-recognition of the loan, the impairment loss is measured using the original effective interest rate before modification of terms. We reduce the carrying amount of the impaired loan by the use of an allowance account and recognize the amount of the loss in the consolidated statement of income as a component of the provision for credit losses. We record increases to our allowance for loan losses as an increase of the provision for loan losses in our income statement. Charge-offs reduce our allowance while recoveries, if any, are credited to the allowance account. If we determine that we no longer require allowances which we have previously established, we decrease our allowance and record the amount as a reduction of the provision for loan losses in our income statement. When it is considered that there is no realistic prospect of recovery and all collateral has been realized or transferred to us, the loan and any associated allowance for loan losses is charged off (i.e., the loan and the related allowance for loan losses are removed from the balance sheet).

While we assess the impairment for our corporate credit exposures individually, we assess the impairment of our smaller-balance standardized homogeneous loans collectively.

Our collectively assessed allowance for non-impaired loans reflects allowances to cover for incurred losses that have neither been individually identified nor provided for as part of the impairment assessment of smaller-balance homogeneous loans.

For further details regarding our accounting policies regarding impairment loss and allowance for credit losses, please refer to Note 1 “Significant Accounting Policies and Critical Accounting Estimates”.to the consolidated financial statements.

Impaired loans, allowance for loan losses and coverage ratios by business division

	Dec 31, 2017		
in € m.	Impaired loans	Loan loss allowance	Impaired loan coverage

Impaired loans

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			ratio
Corporate & Investment Bank	2,517	1,565	62 %
Private & Commercial Bank	3,717	2,355	63 %
Asset Management	0	0	N/M
Corporate & Other	1	1	N/M
Total	6,234	3,921	63 %

N/M – not meaningful.

Impaired loans, allowance for loan losses and coverage ratios by industry

in € m.	Dec 31, 2017 Impaired Loans			Loan loss allowance			Total	Impaired loan coverage ratio
	Individually assessed	Collectively assessed	Total	Individually assessed allowance	Collectively assessed allowance for impaired loans	Collectively assessed allowance for non-impaired loans		
Financial intermediation	121	8	129	1	3	40	44	34 %
Fund management activities	8	8	16	1	0	3	4	24 %
Manufacturing	520	165	685	439	146	51	635	93 %
Wholesale and retail trade	333	188	521	211	156	27	394	76 %
Households	155	2,233	2,388	153	1,290	83	1,526	64 %
Commercial real estate activities	345	30	376	115	11	42	168	45 %
Public sector	74	0	74	6	0	12	17	24 %
Other ¹	1,792	254	2,046	840	139	153	1,132	55 %
Total	3,348	2,886	6,234	1,766	1,745	410	3,921	63 %

1 Thereof: 'Transportation, storage and communication' - Total Impaired Loans € 808 million/Total Loan loss allowance € 469 million, 'Real estate; renting and business activities' - € 482 million/ € 234 million, 'Construction': € 378 million/ € 144 million, 'Mining and quarrying' - € 169 million/ € 116 million.

Impaired loans, allowance for loan losses and coverage ratios by region

in € m.	Dec 31, 2017 Impaired Loans			Loan loss allowance			Total	Impaired loan coverage
	Individually assessed	Collectively assessed	Total	Individually assessed allowance	Collectively assessed allowance	Collectively assessed allowance for		

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					for impaired loans	non-impaired loans		ratio
Germany	953	1,312	2,266	600	823	104	1,527	67 %
Western Europe (excluding Germany)	1,471	1,422	2,892	815	822	113	1,749	60 %
Eastern Europe	45	123	168	45	92	11	147	88 %
North America	497	1	498	67	0	102	170	34 %
Central and South America	70	0	70	14	0	21	35	50 %
Asia/Pacific	264	28	292	223	8	41	272	93 %
Africa	48	0	49	1	0	9	10	20 %
Other	0	0	0	0	0	11	11	N/M
Total	3,348	2,886	6,234	1,766	1,745	410	3,921	63 %

N/M – not meaningful.

Development of impaired loans

in € m.	Dec 31, 2017		
	Individually assessed	Collectively assessed	Total
Balance, beginning of year	4,126	3,321	7,447
Classified as impaired during the year	1,370	1,248	2,618
Transferred to not impaired during the year ¹	(1,127)	(961)	(2,088)
Charge-offs	(540)	(605)	(1,146)
Disposals of impaired loans	(267)	(116)	(383)
Exchange rate and other movements	(215)	(1)	(216)
Balance, end of year	3,348	2,886	6,234