

Deutsche Bank

## Pillar 3 Report 2011

*Passion to Perform*





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# 1. Introduction

Since 2008, Deutsche Bank Group has operated under the Basel 2 capital framework (“Basel 2”), the revised international capital adequacy standards as recommended by the Basel Committee on Banking Supervision in 2004. Starting with December 31, 2011, the calculation of the Group’s capital ratios incorporates the amended capital requirements for trading book and securitization positions, also known as “Basel 2.5”. The framework consists of three pillars each of them concentrating on a different aspect of banking regulation.

- Pillar 1 makes recommendations for the calculation of minimum capital requirements.
- Pillar 2 discusses the key principles of supervisory review and risk management guidance.
- Pillar 3 complements the first two pillars by requiring a range of disclosures on capital and risk assessment processes, aimed at encouraging and reinforcing market discipline.

The European Union enacted the Capital Requirements Directive 3, which adopted the Basel 2.5 capital framework in Europe. Germany adopted the Capital Requirements Directive 3 into national law and revised the disclosure requirements related to Pillar 3 in Section 26a of the German Banking Act (“Kreditwesengesetz” or “KWG”) and in Part 5 of the German Regulation on Solvency (“Solvabilitätsverordnung”, “Solvency Regulation” or “SolvV”).

The chapters on qualitative and quantitative risk disclosures provide a comprehensive view on the risk profile of Deutsche Bank Group. The quantitative information generally reflects Deutsche Bank Group including Postbank for the reporting dates December 31, 2011 and December 31, 2010, or for the respective reporting periods starting December 3, 2010. In the limited instances where a consolidated view has not been presented, a separate Postbank risk disclosure or applicable qualitative commentary is provided where appropriate.

Postbank conducts its own risk management activities under its own statutory responsibilities. Deutsche Bank Group provides advisory services to Postbank with regard to specific risk management areas. Substantial progress was made during 2011 to align risk assessment, measurement and control procedures between Postbank and Deutsche Bank Group.

The Deutsche Bank group of institutions (also referred to as “the Group”) has applied the revised capital framework for the majority of its risk exposures on the basis of the Group’s internal models for measuring credit risk, market risk and operational risk, as approved by the German Federal Financial Supervisory Authority (Bundesanstalt für Finanzdienstleistungsaufsicht, referred to as “BaFin”). This report is the Group’s Pillar 3 report, incorporating requirements as laid out in the Basel 2.5 framework. Its compilation is based upon a set of internally defined principles and related processes as stipulated in a respective Pillar 3 disclosure policy. The report is published for the financial year ending December 31, 2011.

As it is not required by regulation, this report has not been audited by the Group’s external auditors. However, it also includes information that is contained within the audited consolidated financial statements as reported in the Group’s Financial Report 2011.

The disclosure requirements in relation to remuneration as codified in the Instituts-Vergütungsverordnung (“InstitutsVergV”) are addressed and provided in the Group’s Remuneration Report 2011.

## 2. Scope of Application

Deutsche Bank Aktiengesellschaft (“Deutsche Bank AG”), headquartered in Frankfurt am Main, Germany, is the parent institution of the Deutsche Bank group of institutions (“Group”), which is subject to the supervisory provisions of the KWG and the SolvV. Under the KWG, a regulatory group of institutions consists of a credit institution (also referred to as “bank”) or financial services institution, as the parent company, and all other banks, financial services institutions, investment management companies, financial enterprises, payment institutions and ancillary services enterprises which are subsidiaries in the meaning of Section 1 (7) KWG. Such entities are fully consolidated for the Group’s regulatory reporting. Additionally, the Group can also include certain companies, which are not subsidiaries, on a pro-rata basis. Insurance companies and companies outside the finance sector are not included.

For financial conglomerates, however, insurance companies are included in an additional capital adequacy (also referred to as “solvency margin”) calculation. The Group has been designated by the BaFin as a financial conglomerate in October 2007. The Group’s solvency margin as a financial conglomerate remains dominated by its banking activities.

The regulatory principles of consolidation are not identical to those applied for the Group’s financial statements, which are prepared in accordance with the International Financial Reporting Standards (“IFRS”). Nonetheless, the majority of subsidiaries according to the Banking Act are also fully consolidated in accordance with IFRS in the Group’s consolidated financial statements and vice versa. For more detailed information about the Group’s accounting policies on consolidation please see Note 01 “Significant Accounting Policies” in the Group’s Financial Report 2011.

The main differences between regulatory and accounting consolidation are:

- Entities which do not form part of the regulatory group of institutions because they do not belong to the banking industry, but which are controlled by the Group according to IFRS, are included in the consolidated financial statements.
- Most of the Group’s Special Purpose Entities (“SPEs”) consolidated under IFRS do not meet the specific consolidation requirements pursuant to Section 10a KWG and are consequently not consolidated within the regulatory Group. However, the risks resulting from the Group’s exposures to such entities are reflected in the Group’s regulatory capital requirements.
- Some entities included in the regulatory scope of application are not consolidated for accounting purposes but are treated differently, in particular using the equity method of accounting. There are two entities within the Group which are jointly controlled by its owners and consolidated on a pro-rata basis. One entity is voluntarily consolidated on a pro-rata basis. All three entities are accounted for under the equity method in the Group’s financial statements.

Section 10 (6) No. 1, 2, 3 and 5 KWG requires the deduction of participating interests in unconsolidated banking, financial and insurance entities from the Group’s own funds when the Group holds more than 10% of the capital (in case of insurance entities 20% either of the capital or of voting rights unless included in the solvency margin calculation of the financial conglomerate). Since the Group is classified as a financial conglomerate, material investments in insurance entities amounting to at least 20% of capital or voting rights are not deducted from the Group’s own funds as they are included in the solvency calculation at financial conglomerate level.

Section 31 (3) KWG allows the exclusion of small entities in the regulatory scope of application from consolidated regulatory reporting if either their total assets are below € 10 million or below 1 % of total assets of the Group. The Group has used this exemption rule for those small entities that comply with this rule and have not been included in the Group's consolidated financial statements in accordance with IFRS.

The Group comprised 1,027 subsidiaries as per year end 2011, of which 3 were consolidated on a pro-rata basis. The Group comprised 152 credit institutions, 2 payment institutions, 93 financial services institutions, 627 financial enterprises, 14 investment management companies and 139 ancillary services enterprises.

102 entities were exempted from regulatory consolidation pursuant to Section 31 (3) KWG. None of these entities was consolidated for accounting purposes. The book values of the Group's participation in their equity were deducted from the Group's regulatory capital. The same treatment was applied to further 274 unconsolidated entities which the Group deducted from its regulatory capital pursuant to Section 10 (6) KWG.

For information on the Group, as consolidated for accounting purposes under IFRS, please refer to Note 44 "Shareholdings" in the Group's Financial Report for the year 2011.

In the following chapters the quantitative information presented refers to the regulatory Group unless another relevant scope is explicitly stated.



## 3. Capital Adequacy

### 3.1 Regulatory Capital

A bank's total regulatory capital, also referred to as "Own Funds", is divided into three tiers: Tier 1, Tier 2 and Tier 3 capital, and the sum of Tier 1 and Tier 2 capital is also referred to as "Regulatory Banking Capital".

- Tier 1 capital consists primarily of common share capital, additional paid-in capital, retained earnings and certain hybrid capital components such as noncumulative trust preferred securities, also referred to as Additional Tier 1 capital. Common shares in treasury, goodwill and other intangible assets are deducted from Tier 1 capital. Other regulatory adjustments entail the exclusion of capital from entities outside the group of institutions and the reversal of capital effects under the fair value option on financial liabilities due to own credit risk. Tier 1 capital without hybrid capital components is referred to as Core Tier 1 capital.
- Tier 2 capital consists primarily of cumulative trust preferred securities, certain profit participation rights and long-term subordinated debt, as well as 45% of unrealized gains on certain listed securities.
- Certain items must be deducted from Tier 1 and Tier 2 capital. Primarily these include deductible investments in unconsolidated banking, financial and insurance entities where the Group holds more than 10% of the capital (in case of insurance entities 20% either of the capital or of voting rights unless included in the solvency margin calculation of the financial conglomerate), the amount by which the expected loss for exposures to central governments, institutions and corporate and retail exposures as measured under the bank's internal ratings based approach ("IRBA") model exceeds the value adjustments and provisions for such exposures, the expected losses for certain equity exposures, securitization positions not included in the risk-weighted assets and the value of securities delivered to a counterparty plus any replacement cost to the extent the required payment by the counterparty has not been made within five business days after delivery provided the transaction has been allocated to the bank's trading book. Starting with December 31, 2011, the deduction for securitization positions calculated according to Basel 2 is replaced by a calculation according to Basel 2.5.
- Tier 3 capital consists mainly of certain short-term subordinated debt.

The amount of subordinated debt that may be included as Tier 2 capital is limited to 50% of Tier 1 capital. Total Tier 2 capital is limited to 100% of Tier 1 capital.

The Core Tier 1 and the Tier 1 capital ratio are the principal measures of capital adequacy for internationally active banks. The ratios compare a bank's regulatory Core Tier 1 and Tier 1 capital with its credit risks, market risks and operational risks pursuant to Basel 2.5 (which the Group refers to collectively as the "risk-weighted assets" or "RWA"). In the calculation of the risk-weighted assets the Group uses BaFin approved internal models for all three risk types. More than 90% of the Group's exposure relating to asset and off-balance sheet credit risks (excluding Postbank) is measured using internal rating models under the so-called advanced IRBA. For December 31, 2010, the vast majority of the Group's market risk component was a multiple of its value-at-risk figure, which was calculated for regulatory purposes based on the Group's internal models. Starting with December 31, 2011, the market risk component includes a multiple of the stressed value-at-risk and the value-at-risk, as well as the incremental risk charge and the comprehensive risk measure on the Group's correlation trading portfolio.

All of which are all calculated on the basis of the Group's BaFin approved internal models. The market risk component now also includes securitizations in the trading book outside the correlation trading portfolio measured with the standardized approach according to Basel 2.5. Further standard calculation approaches are used for remaining market risk positions, especially for the trading market risk of Deutsche Postbank. For operational risk calculations, the Group uses the so-called Advanced Measurement Approach ("AMA") pursuant to the German Banking Act.

The regulatory banking capital and Tier 3 capital (together, "own funds") excluding transitional items pursuant to Section 64h (3) KWG are set forth further below and summarized in the following table.

**Table 1 Regulatory Capital**

in € m.	Dec 31, 2011 Basel 2.5	Dec 31, 2010 Basel 2
<b>Tier 1 capital:</b>		
<b>Core Tier 1 capital</b>		
Common shares	2,380	2,380
Additional paid-in capital	23,695	23,515
Retained earnings, common shares in treasury, foreign currency translation, noncontrolling interests	29,400	24,797
Items to be fully deducted from Tier 1 capital pursuant to Section 10 (2a) KWG (inter alia goodwill and intangible assets)	(14,459)	(14,489)
Items to be partly deducted from Tier 1 capital pursuant to Section 10 (6) and (6a) KWG		
Deductible investments in banking, financial and insurance entities	(1,332)	(954)
Securitization positions not included in risk-weighted assets	(2,863)	(4,850)
Excess of expected losses over risk provisions	(508)	(427)
Items to be partly deducted from Tier 1 capital pursuant to Section 10 (6) and (6a) KWG	(4,703)	(6,231)
<b>Core Tier 1 capital</b>	<b>36,313</b>	<b>29,972</b>
<b>Additional Tier 1 capital</b>		
Noncumulative trust preferred securities <sup>1</sup>	12,734	12,593
<b>Additional Tier 1 capital</b>	<b>12,734</b>	<b>12,593</b>
<b>Total Tier 1 capital pursuant to Section 10 (2a) KWG</b>	<b>49,047</b>	<b>42,565</b>
<b>Tier 2 capital:</b>		
Unrealized gains on listed securities (45% eligible)	70	224
Profit participation rights	1,150	1,151
Cumulative preferred securities	294	299
Qualified subordinated liabilities	9,368	10,680
Items to be partly deducted from Tier 2 capital pursuant to Section 10 (6) and (6a) KWG	(4,703)	(6,231)
<b>Total Tier 2 capital pursuant to Section 10 (2b) KWG</b>	<b>6,179</b>	<b>6,123</b>
<b>Total Tier 3 capital pursuant to Section 10 (2c) KWG</b>	<b>-</b>	<b>-</b>
<b>Total regulatory capital</b>	<b>55,226</b>	<b>48,688</b>

<sup>1</sup> Included € 20 million silent participations as of December 31, 2011 and 2010.

Common shares consist of Deutsche Bank AG's common shares issued in registered form without par value. Under German law, each share represents an equal stake in the subscribed capital. Therefore, each share has a nominal value of € 2.56, derived by dividing the total amount of share capital by the number of shares. As of December 31, 2011, 929,499,640 shares were issued and fully paid, of which the Group held 24,888,999 shares, leaving 904,610,641 shares outstanding. There are no issued ordinary shares that have not been fully paid. Related share premium is included in additional paid-in capital.

In addition, the Group has issued the following hybrid capital instruments which qualify as Tier 1 capital:

Table 2 Terms and Conditions of the outstanding hybrid Tier 1 Capital Instruments

Issuer	Amount in m.	Currency	Interest payment obligations	Termination right of Issuer	Step-up clauses or other early redemption- incentives
DB Capital Trust I	318	USD	<ul style="list-style-type: none"> <li>Until March 30, 2009: 3-Month LIBOR plus 1.7 %</li> <li>From March 30, 2009: 5-Year U.S. Dollar Swap Rate plus 2.7 %</li> </ul>	Since March 30, 2009 and on March 30 of each fifth year thereafter with period of 90 days.	yes, see interest payment obligations
DB Capital Trust II	20,000	JPY	<ul style="list-style-type: none"> <li>Until April 27, 2029: 5.2 % p.a.</li> <li>From April 27, 2029: 5-Year Japanese Yen Swap Rate plus 1.62 %</li> </ul>	At the earliest April 27, 2029 with period of 90 days.	yes, see interest payment obligations
DB Capital Trust III	113	USD	<ul style="list-style-type: none"> <li>Until June 30, 2014: 3-Month LIBOR plus 1.9 %</li> <li>From June 30, 2014: 5-Year U.S. Dollar Swap Rate plus 2.9 %</li> </ul>	At the earliest June 30, 2014 with period of 90 days.	yes, see interest payment obligations
DB Capital Trust IV	153	USD	<ul style="list-style-type: none"> <li>Until June 30, 2011: 3-Month LIBOR plus 1.8 %</li> <li>From June 30, 2011: 5-Year U.S. Dollar Swap Rate plus 2.8 %</li> </ul>	Since June 30, 2011: on June 30 of each fifth year thereafter with period of 90 days.	yes, see interest payment obligations
DB Capital Trust V	147	USD	<ul style="list-style-type: none"> <li>Until June 30, 2010: 3-Month LIBOR plus 1.8 %</li> <li>From June 30, 2010: 5-Year U.S. Dollar Swap Rate plus 2.8 %</li> </ul>	Since June 30, 2010: on June 30 of each fifth year thereafter with period of 90 days.	yes, see interest payment obligations
DB Capital Funding Trust I	625	USD	<ul style="list-style-type: none"> <li>Until June 30, 2009: 7.872 % p.a.</li> <li>From June 30, 2009: 3-Month LIBOR plus 2.97 %</li> </ul>	Since June 30, 2009: every 3 months thereafter with period of 30 days.	yes, see interest payment obligations
DB Capital Funding Trust IV	1,000	EUR	<ul style="list-style-type: none"> <li>Until September 19, 2013: 5.33 % p.a.</li> <li>From September 19, 2013: 3-Month EURIBOR plus 1.99 %</li> </ul>	At the earliest September 19, 2013 with period of 30 days.	yes, see interest payment obligations
DB Capital Funding Trust V	300	EUR	<ul style="list-style-type: none"> <li>6.15 % p.a.</li> </ul>	Since December 2, 2009: every 3 months thereafter with period of 30 days.	none
DB Capital Funding Trust VI	900	EUR	<ul style="list-style-type: none"> <li>Until January 28, 2010: 6 % p.a.</li> <li>From January 28, 2010: Four times the difference between 10-Year- and 2-Year-CMS-Rate, capped at 10 % and floored at 3.5 %</li> </ul>	Since January 28, 2010: on January 28 of each year thereafter with period of 30 days.	none
DB Capital Funding Trust VII	800	USD	<ul style="list-style-type: none"> <li>Until January 19, 2016: 5.628 % p.a.</li> <li>From January 19, 2016: 3-Month LIBOR plus 1.7 %</li> </ul>	At the earliest January 19, 2016 with period of 30 days.	yes, see interest payment obligations
DB Capital Funding Trust VIII	600	USD	<ul style="list-style-type: none"> <li>6.375 % p.a.</li> </ul>	Since October 18, 2011: every 3 months thereafter with period of 30 days.	none
DB Capital Funding Trust IX	1,150	USD	<ul style="list-style-type: none"> <li>6.625 % p.a.</li> </ul>	At the earliest August 20, 2012 with period of 30 days.	none
DB Capital Funding Trust X	805	USD	<ul style="list-style-type: none"> <li>7.350 % p.a.</li> </ul>	At the earliest December 15, 2012 with period of 30 days.	none
DB Capital Funding Trust XI	1,300	EUR	<ul style="list-style-type: none"> <li>9.5 % p.a.</li> </ul>	At the earliest March 31, 2015 with period of 30 days.	none
DB Contingent Capital Trust II	800	USD	<ul style="list-style-type: none"> <li>6.55 % p.a.</li> </ul>	At the earliest May 23, 2017 with period of 30 days.	none
DB Contingent Capital Trust III	1,975	USD	<ul style="list-style-type: none"> <li>7.6 % p.a.</li> </ul>	At the earliest February 20, 2018 with period of 30 days.	none
DB Contingent Capital Trust IV	1,000	EUR	<ul style="list-style-type: none"> <li>8.0 % p.a.</li> </ul>	At the earliest May 15, 2018 with period of 30 days.	none
DB Contingent Capital Trust V	1,385	EUR	<ul style="list-style-type: none"> <li>8.05 % p.a.</li> </ul>	At the earliest June 30, 2018 with period of 30 days.	none
Deutsche Postbank Funding Trust I	300	EUR	<ul style="list-style-type: none"> <li>Until December 2, 2005: 6 % p.a.</li> <li>From December 2, 2005: 10-Year EUR Swap Rate plus 0.025 %, max. 8 %</li> </ul>	Since December 2, 2010 at each subsequent coupon date.	yes, see interest payment obligations
Deutsche Postbank Funding Trust II	500	EUR	<ul style="list-style-type: none"> <li>Until December 23, 2009: 6 % p.a.</li> <li>From December 23, 2009: Four times difference between 10-Year and 2-Year CMS-Rate, with min. CMS-Rate 3.75 % and max. CMS-Rate 10 %</li> </ul>	Since December 23, 2009 at each subsequent coupon date.	yes, see interest payment obligations
Deutsche Postbank Funding Trust III	300	EUR	<ul style="list-style-type: none"> <li>Until June 7, 2008: 7 % p.a.</li> <li>From June 7, 2008: 10-Year EUR Swap Rate plus 0.125 %, max. 8 %</li> </ul>	Since June 7, 2011 at each subsequent coupon date.	yes, see interest payment obligations
Deutsche Postbank Funding Trust IV	500	EUR	<ul style="list-style-type: none"> <li>Until June 29, 2017: 5.983 % p.a.</li> <li>From June 29, 2017: 3-Month EURIBOR plus 2.07 %</li> </ul>	At the earliest June 29, 2017 at each subsequent coupon date.	yes, see interest payment obligations
Deutsche Postbank AG – silent participation	10	EUR	<ul style="list-style-type: none"> <li>8.15 % p.a.</li> </ul>	Fixed maturity December 31, 2018	none
Deutsche Postbank AG – silent participation	10	EUR	<ul style="list-style-type: none"> <li>8.15 % p.a.</li> </ul>	Fixed maturity December 31, 2018	none

Of the € 12,734 million additional Tier 1 capital € 8,630 million have no step-up clauses or other early redemption-incentives. No instrument has the option to be converted into ordinary shares. All additional Tier 1 capital instruments qualify as Tier 1 capital according to Section 64m (1) KWG. In the event of the initiation of insolvency proceedings or of liquidation, they will not be repaid until all creditors have been satisfied.

The Group's Tier 2 capital instruments qualify as regulatory capital according to Section 10 (5) and (5a) KWG, except for € 500 million profit participation rights issued by Deutsche Postbank AG which qualify as Tier 2 capital according to Section 64m (1) KWG. Accordingly, all Tier 2 capital instruments have a minimum original maturity of 5 years. The majority of the volume of the Group's Tier 2 instruments, however, has an original maturity of 10 years or more and call rights for the issuer after 5 years or more. In the last two years before the maturity of an instrument only 40 % of the paid-in capital qualifies as regulatory capital.

The several hundred individual Tier 2 capital instruments can be clustered as follows:

**Table 3 Terms and Conditions of the outstanding Tier 2 Capital Instruments**

Issuer	Maturity (year)	Amount in m.	Currency	Type of Tier 2 capital instrument	Early redemption-option	Interest payment obligations
DB Capital Finance Trust I	perpetual	300	EUR	Cumulative Trust preferred securities	At the earliest on June 27, 2015 and thereafter on each yearly coupon-payment date (June 27) with period of 30 days.	Fixed interest rate during first five periods of interest payments at 7 % p.a., thereafter ten times the difference between 10 year- and 2 year-CMS-Rate, capped at 10 year-CMS and floored at 1.75 %
Deutsche Postbank AG	2014	100	EUR	Profit participation rights	no	6.00 % – 6.26 %
Deutsche Postbank AG	2015	197	EUR	Profit participation rights	no	5.13 % – 5.65 %
Deutsche Postbank AG	2016	676	EUR	Profit participation rights	no	4.40 % – 4.72 %
Deutsche Postbank AG	2017	21	EUR	Profit participation rights	no	5.12 %
Deutsche Postbank AG	2018	91	EUR	Profit participation rights	no	5.14 % – 5.54 %
Deutsche Postbank AG	2020	14	EUR	Profit participation rights	no	5.10 %
Deutsche Postbank AG	2021	24	EUR	Profit participation rights	no	4.53 % – 4.73 %
Deutsche Postbank AG	2023	10	EUR	Profit participation rights	no	5.50 %
Deutsche Postbank AG	2027	20	EUR	Profit participation rights	no	5.25 %
Bankers Trust Corporation – New York	2015	141	USD	Subordinated liability	no	7.50 %
BHF-BANK AG	2015	77	EUR	Subordinated liability	no	4.46 %
BHF-BANK AG	2019	12	EUR	Subordinated liability	no	4.80 %
BHF-BANK AG	2020	86	EUR	Subordinated liability	no	4.59 % – 4.63 %
BHF-BANK AG	2025	29	EUR	Subordinated liability	no	4.75 %
Deutsche Bank AG	2012	8,000	JPY	Subordinated liability	no	1.72 %
Deutsche Bank AG	2012	105	EUR	Subordinated liability	no	5.50 %
Deutsche Bank AG	2013	1,175	EUR	Subordinated liability	no	5.10 % – 5.35 %
Deutsche Bank AG	2013	6,000	JPY	Subordinated liability	no	1.08 %
Deutsche Bank AG	2014	263	AUD	Subordinated liability	Early redemption at the issuer's option since 2009 at each coupon-date	5.51 % – 6.50 %
Deutsche Bank AG	2014	1,081	EUR	Subordinated liability	1,061 m.: Early redemption at the issuer's option since 2009 at each coupon-date	2.09 % (var.) – 6.00 %
Deutsche Bank AG	2014	3,000	JPY	Subordinated liability	Early redemption at the issuer's option since 2009 at each coupon-date	0.95 % (var.)

Issuer	Maturity (year)	Amount in m.	Currency	Type of Tier 2 capital instrument	Early redemption-option	Interest payment obligations
Deutsche Bank AG	2014	214	NZD	Subordinated liability	Early redemption at the issuer's option since 2009 at each coupon-date	3.62 % (var.)
Deutsche Bank AG	2015	335	USD	Subordinated liability	Early redemption at the issuer's option since 2010 at each coupon-date	1.06 % (var.)
Deutsche Bank AG	2015	718	EUR	Subordinated liability	Early redemption at the issuer's option since 2010 at each coupon-date	2.21 % (var.) – 2.37 % (var.)
Deutsche Bank AG	2015	206	GBP	Subordinated liability	Early redemption at the issuer's option since 2010 at each coupon-date	1.71 % (var.)
Deutsche Bank AG	2016	220	CAD	Subordinated liability	Early redemption at the issuer's option since 2011	4.90 % (var.)
Deutsche Bank AG	2016	448	EUR	Subordinated liability	Early redemption at the issuer's option since 2011	1.79 % (var.)
Deutsche Bank AG	2017	509	EUR	Subordinated liability	489 m.: Early redemption at the issuer's option in 2012	3.625 % (var.) – 5.815 %
Deutsche Bank AG	2018	100	EUR	Subordinated liability	10 m.: Early redemption at the issuer's option in 2013	5.50 % – 6.50 % (var.)
Deutsche Bank AG	2019	249	EUR	Subordinated liability	238 m.: Early redemption at the issuer's option in 2014	5.00 % – 6.00 %
Deutsche Bank AG	2020	1,235	EUR	Subordinated liability	85 m.: Early redemption at the issuer's option in 2015	4.00 % (var.) – 5.00 %
Deutsche Bank AG	2024	20	EUR	Subordinated liability	no	5.10 %
Deutsche Bank AG	2027	15,000	JPY	Subordinated liability	no	5.35 % (var.)
Deutsche Bank AG	2033	5	EUR	Subordinated liability	Early redemption at the issuer's option in 2013	6.30 %
Deutsche Bank AG	2035	50	EUR	Subordinated liability	Early redemption at the issuer's option since 2010 at each coupon-date	6.00 %
Deutsche Bank Financial Inc.	2015	778	USD	Subordinated liability	no	5.38 %
Deutsche Bank S.A.E.	2013	41	EUR	Subordinated liability	no	3.72 % (var.)
Deutsche Bank S.A.E.	2014	40	EUR	Subordinated liability	no	5.72 %
Deutsche Bank S.p.A.	2018	500	EUR	Subordinated liability	Early redemption at the issuer's option in 2013	0.892 % (var.)
Deutsche Morgan Grenfell Group PLC	perpetual	6	USD	Subordinated liability	Early redemption at the issuer's option since 1991 at each coupon-date with minimum period of 30 days	0.75 % (var.)
BHW Bausparkasse AG	2012	1	EUR	Subordinated liability	no	5.22 %
BHW Bausparkasse AG	2013	91	EUR	Subordinated liability	no	4.90 % – 5.80 %
BHW Bausparkasse AG	2014	55	EUR	Subordinated liability	no	3.18 % (var.) – 5.60 %
BHW Bausparkasse AG	2017	5	EUR	Subordinated liability	no	5.69 %
BHW Bausparkasse AG	2018	6	EUR	Subordinated liability	no	6.08 %
BHW Bausparkasse AG	2019	48	EUR	Subordinated liability	no	4.27 % – 5.83 %
BHW Bausparkasse AG	2023	40	EUR	Subordinated liability	no	5.45 % – 6.13 %
BHW Bausparkasse AG	2024	10	EUR	Subordinated liability	no	5.64 %
Deutsche Postbank AG	2012	250	EUR	Subordinated liability	no	2.70 % (var.) – 6.28 %

Issuer	Maturity (year)	Amount in m.	Currency	Type of Tier 2 capital instrument	Early redemption-option	Interest payment obligations
Deutsche Postbank AG	2013	227	EUR	Subordinated liability	no	4.78 % – 6.00 %
Deutsche Postbank AG	2014	83	EUR	Subordinated liability	no	4.50 % – 6.00 %
Deutsche Postbank AG	2015	508	EUR	Subordinated liability	500 m.: Early redemption at the issuer's option since 2011 at each coupon-date	2.38 % (var.) – 5.50 %
Deutsche Postbank AG	2016	30	EUR	Subordinated liability	no	4.92 % – 5.01 %
Deutsche Postbank AG	2017	60	EUR	Subordinated liability	no	5.21 % – 5.83 %
Deutsche Postbank AG	2018	313	EUR	Subordinated liability	no	5.19 % – 6.63 %
Deutsche Postbank AG	2019	65	EUR	Subordinated liability	no	5.14 % – 5.46 %
Deutsche Postbank AG	2022	15	EUR	Subordinated liability	no	4.63 %
Deutsche Postbank AG	2023	98	EUR	Subordinated liability	no	5.60 % – 6.01 %
Deutsche Postbank AG	2024	43	EUR	Subordinated liability	no	5.15 % – 5.45 %
Deutsche Postbank AG	2027	13	EUR	Subordinated liability	no	6.50 %
Deutsche Postbank AG	2036	24,000	JPY	Subordinated liability	no	2.76 % – 2.84 %

The following table reconciles shareholders' equity according to IFRS to Tier 1 capital pursuant to Basel 2.5 respectively Basel 2, excluding transitional items pursuant to Section 64h (3) German Banking Act.

Table 4 Reconciliation of IFRS Shareholders' Equity to Tier 1 Capital

in € m.	Dec 31, 2011 Basel 2.5	Dec 31, 2010 Basel 2
<b>Total shareholders' equity<sup>1</sup></b>	<b>53,390</b>	<b>48,819</b>
Reversal of net (gains) losses not recognized in the income statement excluding foreign currency translation	847	298
Less accrued future dividend	(697)	(697)
<b>Active book equity</b>	<b>53,540</b>	<b>48,420</b>
Goodwill and intangible assets	(15,802)	(15,594)
Noncontrolling interest	1,270	1,549
Other (consolidation and regulatory adjustments)	2,008	1,828
Noncumulative trust preferred securities <sup>2</sup>	12,734	12,593
Items to be partly deducted from Tier 1 capital	(4,703)	(6,231)
<b>Tier 1 capital</b>	<b>49,047</b>	<b>42,565</b>

<sup>1</sup> The initial acquisition accounting for ABN AMRO, which was finalized at March 31, 2011, resulted in a retrospective adjustment of retained earnings of € (24) million for December 31, 2010.

<sup>2</sup> Included € 20 million silent participations as of December 31, 2011 and as of December 31, 2010.

## 3.2 Regulatory Capital Requirements

Under the Basel framework, overall capital requirements have to be calculated and compared with the regulatory capital described above. The overall capital requirements are frequently expressed in risk-weighted asset terms whereby capital requirements are 8% of risk-weighted assets.

Starting with December 31, 2011, the calculation of the Group's RWAs and capital ratios incorporates the amended capital requirements for trading book and securitization positions following the Capital Requirements Directive 3, also known as "Basel 2.5", and implemented in the German Banking Act and the Solvency Regulation.

In December 2007 the BaFin approved the use of the advanced IRBA for the majority of the Group's counterparty credit risk positions which excludes the exposures consolidated from Postbank. Additional advanced IRBA-related BaFin approvals have been obtained during the period 2008 to 2011. The advanced IRBA constitutes the most sophisticated approach available under the Basel regime. Postbank has BaFin approval for the IRBA to be applied to the retail business, which is assigned to the advanced IRBA for consolidation on Group level, and the foundation IRBA for a significant portion of the other counterparty credit risk exposures.

The remaining IRBA eligible exposures are covered within the standardized approach either temporarily (where the Group seeks regulatory approval over time) or permanently (where exposures are treated under the standardized approach in accordance with Section 70 SolvV). More details on this topic are provided in Chapter 6 "Counterparty Credit Risk: Regulatory Assessment".

The table below shows a breakdown of the total capital requirements and RWA by risk type. The counterparty credit risk within the advanced IRBA, the foundation IRBA and the standardized approach is broken down into different regulatory exposure classes. The capital requirement for securitization positions is separately displayed and is calculated substantially using the IRBA approach; only minor exposures within the Group are captured under the standardized approach. The introduction of Basel 2.5 now requires identifying re-securitization positions in the banking and trading book which receive an increased risk-weighting and result in higher capital charges for credit risk and market risk, respectively. More details on the treatment of securitization positions can be found in Chapter 7 "Securitization".

For equity investments entered into before January 1, 2008, the Group uses the transitional arrangement to exempt these positions from an IRBA treatment and applies the grandfathering rule, using a 100% risk weighting. For investments in equity positions entered into since January 1, 2008, the Group applies the simple risk weight approach within the IRBA for the Group's exposures including Postbank. In 2010, a portion of equity investments consolidated from Postbank, which is no longer held, has been calculated following a probability of default approach. For more details regarding equity investments please refer to Chapter 9.1 "Equity Investments in the Banking Book".

The calculation of regulatory market risk capital requirements excluding Postbank is generally based on an internal value-at-risk model, which was approved by the BaFin in October 1998 for the Group's market risk exposures. The Basel 2.5 framework has now introduced the additional model based risk measures of stressed value-at-risk, incremental risk charge and comprehensive risk measure within market risk for banks applying an internal model approach. Moreover, it requires calculating the regulatory capital for specific interest rate risk of trading book securitizations and nth-to-default credit derivatives which are not eligible for the comprehensive risk measure, based on the market risk standardized approach. Further market risk positions covered under the standardized approach are primarily relating to Postbank. More details on the aforementioned internal models are provided in Chapter 8 "Trading Market Risk".

In December 2007, the Group excluding Postbank obtained approval to apply the advanced measurement approach ("AMA") to determine its regulatory operational risk capital requirements. Details on the respective AMA model are given in Chapter 10 "Operational Risk". As of December 31, 2010, Postbank obtained also the approval to apply the advanced measurement approach. The table below shows the capital requirement for operational risk for the Group excluding Postbank, and separately for Postbank.



Table 5 Regulatory Capital Requirements and RWA

in € m.	Dec 31, 2011		Dec 31, 2010	
	Capital requirements	RWA	Capital requirements	RWA
<b>Counterparty credit risk</b>				
<b>Advanced IRBA</b>				
Central governments	207	2,586	235	2,939
Institutions	1,018	12,727	1,857	23,211
Corporates	8,049	100,609	7,978	99,728
Retail (excluding Postbank)	1,718	21,480	1,538	19,230
Retail (Postbank)	912	11,405	1,017	12,718
Other non-credit obligation assets	1,144	14,304	1,035	12,931
<b>Total advanced IRBA</b>	<b>13,049</b>	<b>163,112</b>	<b>13,661</b>	<b>170,757</b>
<b>Foundation approach</b>				
Central governments	3	37	3	43
Institutions	323	4,044	568	7,097
Corporates	1,391	17,382	1,528	19,100
Other non-credit obligation assets	228	2,850	216	2,694
<b>Total foundation approach</b>	<b>1,945</b>	<b>24,312</b>	<b>2,315</b>	<b>28,933</b>
<b>Standardized approach</b>				
Central governments	1	15	1	14
Regional governments and local authorities	8	100	9	116
Other public sector entities	52	654	47	589
Multilateral development banks	-	-	-	-
International organizations	-	-	-	-
Institutions	47	583	69	857
Covered bonds issued by credit institutions	8	98	9	114
Corporates	1,840	22,998	1,997	24,966
Retail	882	11,029	936	11,699
Claims secured by real estate property	252	3,152	246	3,076
Collective investment undertakings	220	2,755	212	2,655
Other items	8	94	14	171
Past due items	156	1,944	240	2,996
<b>Total standardized approach</b>	<b>3,474</b>	<b>43,424</b>	<b>3,780</b>	<b>47,252</b>
<b>Risk from securitization positions</b>				
Securitized (IRBA)	1,340	16,753	1,359	16,990
Securitized (credit risk standardized approach)	157	1,961	234	2,920
<b>Total risk from securitization positions</b>	<b>1,497</b>	<b>18,714</b>	<b>1,593</b>	<b>19,910</b>
<b>Risk from equity positions</b>				
Equity positions (grandfathered)	282	3,522	354	4,420
Equity positions (IRBA simple risk-weight approach)	760	9,503	1,098	13,725
Exchange-traded	81	1,016	78	970
Non-exchange-traded	647	8,088	967	12,082
Non-exchange-traded but sufficiently diversified	32	399	54	674
Equity positions (probability of default approach)	-	-	15	181
<b>Total risk from equity positions</b>	<b>1,042</b>	<b>13,024</b>	<b>1,466</b>	<b>18,326</b>
<b>Settlement risk</b>	<b>14</b>	<b>178</b>	<b>34</b>	<b>429</b>
<b>Total counterparty credit risk</b>	<b>21,021</b>	<b>262,764</b>	<b>22,849</b>	<b>285,607</b>
<b>Market risk in the trading book</b>				
Internal model approach	4,819	60,241	1,537	19,211
VaR	972	12,150	1,537	19,211
Stressed VaR	2,151	26,892	-	-
Incremental risk charge	758	9,475	-	-
Comprehensive risk measurement (correlation trading)	938	11,724	-	-
Standardized approach	628	7,854	356	4,450
Interest rate risk – non-securitization	142	1,780	268	3,350
Interest rate risk – securitization and nth-to-default derivatives	399	4,986	-	-
Equity risk	-	-	-	-
FX risk	55	688	41	513
Commodity risk	-	-	-	-
Other market risk	32	401	47	587
<b>Total market risk in the trading book</b>	<b>5,448</b>	<b>68,095</b>	<b>1,893</b>	<b>23,660</b>
<b>Operational risk</b>				
Advanced measurement approach (excluding Postbank)	3,772	47,148	2,634	32,922
Advanced measurement approach (Postbank)	284	3,547	352	4,405
<b>Total operational risk</b>	<b>4,056</b>	<b>50,695</b>	<b>2,986</b>	<b>37,327</b>
<b>Total regulatory capital requirements and RWA</b>	<b>30,525</b>	<b>381,554</b>	<b>27,728</b>	<b>346,594</b>

Total regulatory capital requirements and RWA increased between December 31, 2011, and December 31, 2010, by € 2.8 billion and € 35.0 billion respectively. The RWA increase is materially from € 44.4 billion market risk in the trading book, primarily due to the implementation of Basel 2.5 framework, € 13.4 billion operational risk, primarily due to the new safety margin taken to cover unforeseen legal risks from financial crisis and € 22.8 billion RWA reduction in counterparty credit risk positions.

### 3.3 Regulatory Capital Ratios

The KWG and the SolvV reflect the capital adequacy rules of Basel 2.5 and require German banks to maintain an adequate level of capital in relation to their regulatory capital requirements comprising counterparty credit risk, operational risk and market risk. Counterparty credit risk and operational risk must be covered with Tier 1 capital and Tier 2 capital (together “regulatory banking capital”). Market risk must be covered with regulatory banking capital (to the extent not required to cover counterparty credit and operational risk) or Tier 3 capital (together with regulatory banking capital, “own funds”).

The following table shows the Group’s eligible regulatory capital available to cover the minimum capital requirements by risk type excluding transitional items pursuant to Section 64h (3) KWG.

Table 6 Coverage of Minimum Capital Requirements

in € m.	Dec 31, 2011		Dec 31, 2010	
	Regulatory capital requirements	Available regulatory capital	Regulatory capital requirements	Available regulatory capital
Counterparty credit risk and operational risk	25,052	55,226	25,803	48,688
Market risk	5,448	30,174	1,893	22,885

As of December 31, 2011, and as of December 31, 2010, the Group held regulatory capital well above the required minimum standards. The regulatory capital increase of € 6.5 billion, entirely in the form of Tier 1 capital, reflected primarily the retained earnings of 2011, the development of foreign currency rates and reduced capital deduction items.

Other principal measures to assess the capital adequacy of a credit institution from a regulatory perspective are regulatory capital ratios, defined as regulatory capital divided by risk-weighted assets. As of December 31, 2011, the Core Tier 1 capital ratio, the Tier 1 capital ratio and the total capital ratio for the Group amounted to 9.5%, 12.9% and 14.5%, respectively. As of December 31, 2010, the three ratios amounted to 8.7%, 12.3% and 14.1%, respectively.

Basel 2.5 requires, in the same way as already Basel 2, the deduction of goodwill from Tier 1 capital. However, for a transitional period the partial inclusion of certain goodwill components in Tier 1 capital is allowed pursuant to German Banking Act Section 64h (3). While such goodwill components are not included in the regulatory capital and capital adequacy ratios shown above, the Group makes use of this transition rule in its capital adequacy reporting to the German regulatory authorities.

As of December 31, 2011, the transitional item amounted to € 319 million compared to € 390 million as of December 31, 2010. In the Group's reporting to the German regulatory authorities, the Tier 1 capital, total regulatory capital and the total risk-weighted assets shown above were increased by this amount. Correspondingly, the Group's Tier 1 and total capital ratios reported to the German regulatory authorities including this item were 12.9% and 14.6%, respectively, on December 31, 2011 compared to 12.4% and 14.2%, respectively, on December 31, 2010.

As of December 31, 2011, regulatory capital ratios for Deutsche Bank AG on a standalone basis and for its subsidiaries Deutsche Bank Privat- und Geschäftskunden AG, norisbank GmbH, DWS Finanz-Service GmbH, Deutsche Bank Europe GmbH and Sal. Oppenheim jr. & Cie. AG & Co.KGaA are not disclosed as they have applied the exemptions codified in Section 2a KWG. As a result, these companies are exempted from the obligation to comply with certain regulatory requirements of the Banking Act on a standalone basis, including solvency calculations and reporting of regulatory capital ratios and hence do not calculate and report capital ratios due to the application of this exemption. These exemptions can only be applied if, among other things, there is no material practical or legal impediment to the prompt transfer of own funds or repayment of liabilities from Deutsche Bank AG to the respective subsidiaries or from all subsidiaries in the Group to Deutsche Bank AG.

Deutsche Postbank AG, consolidated since December 3, 2010, is considered a significant subsidiary of the Group. Here, "significant" is defined as an entity whose relative individual contribution to the Group's risk-weighted assets exceeds 5% of the Group's overall RWA and for which the exemptions codified in Section 2a KWG are not applied. As of December 31, 2011, the conditions for applying the exemptions codified in Section 2a KWG were not yet met with respect to Deutsche Postbank AG. The Tier 1 capital ratio as of December 31, 2011 and the total capital ratio for the Deutsche Postbank Group including Deutsche Postbank AG with goodwill components allowed pursuant to Section 64h (3) KWG amounted to 10.8% and 14.9%, and 8.1% and 11.3% as of December 31, 2010, respectively.

Failure to meet minimum capital requirements can result in orders to suspend or reduce dividend payments or other profit distributions on regulatory capital and discretionary actions by the BaFin that, if undertaken, could have a direct material effect on the Group's businesses. The Group complied with the regulatory capital adequacy requirements in 2011. The Group's subsidiaries which are not included in the regulatory consolidation did not report any capital deficiencies in 2011.

### 3.4 Internal Capital Adequacy Assessment Process (ICAAP)

ICAAP requires banks to identify and assess risks, maintain sufficient capital to face these risks and apply appropriate risk-management techniques to ensure adequate capitalization on an ongoing basis, i.e. internal capital supply to exceed internal capital demand.

The Group maintains compliance with the Internal Capital Adequacy Assessment Process as required under Pillar 2 of Basel 2 and its local implementation in Germany, the Minimum Requirements for Risk Management (“MaRisk”), through its risk management and governance framework, methodologies, processes and infrastructure, as described in Chapter 4 “Risk and Capital Management of the Group”. The Group’s legal entity ICAAP frameworks are designed to be in compliance with local regulatory requirements and, where possible, are consistent with the structure and principles as described in this document.

In line with MaRisk and Basel 2 requirements, the key instruments to ensure adequate capitalization on an ongoing and forward looking basis for the Group are:

- A strategic planning process and continuous monitoring process against approved risk and capital targets set;
- A frequent risk and capital reporting to management;
- An economic capital and stress testing framework.

More information on risk management organized by major risk category can be found in Chapters 5 to 11.

As the primary measure of the Group’s Internal Capital Adequacy Assessment Process (ICAAP) the Group assesses the internal capital adequacy based on the Group’s “gone concern approach” as the ratio of the Group’s total capital supply divided by its total capital demand as shown in the table below. During 2011 the Group tightened the capital supply definition for deferred tax assets, fair value adjustments and noncontrolling interests in accordance with regulatory guidance. The prior year comparison information has been adjusted accordingly.

**Table 7 Internal Capital Adequacy**

in € m.

(unless stated otherwise)

	Dec 31, 2011	Dec 31, 2010
<b>Capital Supply</b>		
Adjusted Active Book Equity <sup>1</sup>	52,818	48,304
Deferred Tax Assets	(8,737)	(8,341)
Fair Value adjustments <sup>2</sup>	(3,323)	(3,612)
Dividend accruals	697	697
Noncontrolling interests <sup>3</sup>	694	590
Hybrid Tier 1 capital instruments	12,734	12,593
Tier 2 capital instruments <sup>4</sup>	12,044	12,610
<b>Capital Supply</b>	<b>66,927</b>	<b>62,841</b>
<b>Capital Demand</b>		
Economic Capital Requirement	26,377	27,178
Intangibles	15,802	15,594
<b>Capital Demand</b>	<b>42,179</b>	<b>42,772</b>
<b>Internal Capital Adequacy Ratio</b>	<b>159 %</b>	<b>147 %</b>

<sup>1</sup> Active Book Equity adjusted for unrealized net gains (losses) on financial assets available for sale, net of applicable tax, and fair value gains on own credit-effect on own liabilities.

<sup>2</sup> Includes fair value adjustments for assets reclassified in accordance with IAS 39 and for banking book assets where no matched funding is available.

<sup>3</sup> Includes noncontrolling interest up to the economic capital requirement for each subsidiary.

<sup>4</sup> Tier 2 capital instruments excluding items to be partly deducted from Tier 2 capital pursuant to Section 10 (6) and (6a) KWG, unrealized gains on listed securities (45 % eligible) and certain haircut-amounts that only apply under regulatory capital assessment.

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 159 % as of December 31, 2011, compared to 147 % as of December 31, 2010. This increase was driven by higher adjusted active book equity and the decrease in capital demand as explained in the below Section 4.6 "Economic Capital Requirements", which both developed in favor of the ratio.

The above capital adequacy measures apply for the consolidated Group as a whole (including Postbank) and form an integral part of the Group's Risk and Capital Management framework, further described in the other chapters of this report.

## 4. Risk and Capital Management of the Group

### Executive Summary

#### The Global Economy

The global economy was impacted by several negative factors in 2011: rising commodity prices, mounting inflation, natural and nuclear disasters in Japan, political unrest in North Africa, debates on the debt ceiling in the U.S. and downgrading by rating agencies – but especially the sovereign debt crisis in Europe.

In 2011, the global economic growth slowed to an estimated 3.5% after a solid growth of 5% in 2010 that was driven by catch-up effects in the wake of the global economic crisis. The slowdown took place predominantly in the industrial countries, while growth continued nearly unabated in the emerging markets. The problems of structural adjustment in the industrial countries had apparently been masked in many cases by the massive monetary and fiscal policy measures introduced in 2008 and 2009, some of which only developed their full effect in 2010. As the economic stimulus measures expired, structural problems returned.

The U.S. economy, where continuing problems in the real estate and job markets slowed growth down from 3% in 2010 to around 1.75% in 2011, demonstrated this notably. In the wake of the tsunami last March and the nuclear catastrophe it unleashed in Fukushima, Japan's economy was temporarily thrown into a recession by a negative supply shock and decreased on an annualized basis by around 0.75%. The eurozone slid into a recession towards the end of the year due to the increasing uncertainty on the future development of the debt crisis and the retarding effects of the fiscal consolidation programs that were launched in many countries. As an annualized average, growth declined from 1.9% in 2010 to around 1.5% in 2011. Only the German economy grew strongly again at 3%, versus 3.6% in 2010. However, the sentiment clearly dampened here over the course of the year, in particular, due to the waning momentum in foreign trade.

#### The Banking Industry

In 2011, the economic environment for the banking industry was marked by a favorable first half and from summer onwards by a significant downturn as the European sovereign debt crisis worsened and economic activity declined more than expected.

Capital market businesses initially saw stable earnings and healthy client demand. This changed with the sovereign debt crisis in Europe spreading to Italy, Spain and other core countries during the third quarter. The uncertainty over debt sustainability, the magnitude of the economic downturn and worries about banks' excessive exposure to countries affected by the crisis paralyzed not only issuance activities, corporate acquisitions and trading in Europe but also the willingness of investors to provide long-term financing to the banking sector. Outside Europe, investment banking performance and banks' term funding remained largely satisfactory. For the year as a whole, the global volume of equity issuance decreased significantly, while debt issuance was down only moderately compared to 2010; the market for M&A picked up slightly, and the syndicated loans business continued to recover.

European banks responded to the widespread drying-up of long-term refinancing sources and of the interbank market by accelerating the restructuring of investment banking activities, reducing risk positions, partially withdrawing from foreign markets and seeking greater recourse to funds made available by the European Central Bank. The change in the refinancing and liquidity situation manifested itself at year-end in the European Central Bank's first-ever three-year tender operation with full allotment. In addition, the European Banking Authority also sought to restore confidence in the industry via two stress tests, increased capital requirements and improved disclosure of risk exposures in the countries affected by the crisis.

Asset management initially benefited in 2011 from the favorable market environment before revenues started to come under pressure with the decline of equity markets in August and higher volatility in the subsequent months. Investors reduced their holdings of equities and debt instruments perceived as relatively risky in favor of, for example, U.S. Treasuries and German Bunds in view of their reputation as safe havens. Banks' commissions and fee income benefited from generally higher trading volumes which was offset by investors' preference for rather low-margin products.

In line with the macroeconomic trends, lending volumes to private and business clients in the eurozone increased moderately in the first two quarters before leveling off towards year-end. Overall, lending volumes increased only insignificantly compared to the prior year. In the U.S., lending to private individuals stabilized in 2011, while corporate lending clearly returned to positive territory in the course of the year. Net interest income suffered from persistently very low interest rates in nearly all the industrialized countries. At the same time, loan loss provisions started to rise again in Europe; by contrast, they continued to fall in the U.S. As a result, banks in the eurozone (unlike U.S. banks) recently began to tighten their lending standards again.

Furthermore, European and U.S. banks posted contrasting profit performances: while banks in the U.S. continued to register sizeable gains and in fact approached the record levels of the pre-crisis period, the banks in Europe experienced declines in net income on an already only moderate performance in the prior year. A few major banks sustained (further) losses in this still relatively favorable economic environment.

The past year provided greater visibility on the new legal architecture for the financial markets. Initiatives were launched in the European Union and the U.S. to transpose the provisions of Basel 3 into national law. In Europe, banks were required for the first time to comply with the requirements of Basel 2.5, as set out in the adapted Capital Requirements Directive ("CRD III"), in particular with its higher risk weights for re-securitizations and trading assets. Furthermore, the global banking supervisors released a draft document detailing the implementation of higher capital requirements for systemically relevant banks as well as a list of the institutions concerned including Deutsche Bank. In the U.S., the various financial regulators – in particular the Federal Reserve, the FDIC, the SEC and the CFTC – introduced rules which cast the underlying legislation of the Dodd-Frank Act adopted in 2010 in concrete regulations for the financial industry. The United Kingdom ventured into new territory with the Vickers Commission's proposals on the organizational separation of lending and deposit-taking businesses with private and business clients from the rest of a bank's activities. Finally, the discussion about the introduction of a financial transaction tax intensified at the European level.

In 2011 the German legislator amended the Securities Trading Act with a view to strengthen investor protection and market transparency and the European Commission proposed an overhaul of the Markets in Financial Instruments Directive to enhance investment advice to retail customers, market transparency and the organization of securities services providers.

## Risk Management Executive Summary

The overall focus of Risk and Capital Management in 2011 was on maintaining the Group's risk profile in line with its risk strategy, strengthening the Group's capital base and supporting its strategic initiatives under phase 4 of the Group's management agenda. This approach is reflected across the different risk metrics summarized below.

### Credit Risk

- Adherence to the Group's core credit principles of proactive and prudent risk management in 2011 has enabled the bank to manage a volatile macro-economic credit environment and contain the level of loan losses, which includes a full year charge for Postbank in 2011. This has been achieved by application of the Group's existing risk management philosophy of underwriting standards, active concentration risk management and risk mitigation strategies including collateral, hedging, netting and credit support arrangements.
- The Group's provision for credit losses in 2011 was € 1.8 billion versus € 1.3 billion in 2010. The increase was mainly attributable to the full year consolidation of Postbank, which contributed € 0.8 billion for the year. This excludes € 0.4 billion releases from Postbank related loan loss allowances recorded prior to consolidation. Excluding Postbank, provisions were down € 139 million primarily reflecting improved performance in the Private & Business Clients Advisory Banking Germany and International. Taking into consideration full 2010 Postbank provisions (given official year-end figures only account for one month for Postbank), the overall combined provisioning level in 2011 would be lower in comparison to 2010.
- The loan portfolio grew by 1 % or € 6 billion mainly due to shifts in foreign exchange rates, while adhering to strict risk-return requirements. Increase was mainly attributed to lower risk buckets while reducing medium and high-risk portfolios.
- The portion of the Group's corporate credit portfolio book carrying an investment-grade rating declined from 73 % at December 31, 2010 to 72 % at December 31, 2011, remaining stable despite challenging macro-economic environment.
- Even though the Group's gross credit exposure increased during 2011, its credit risk profile as measured by the economic capital usage for credit risk totaled € 12.8 billion at year-end 2011 and remained principally unchanged compared to € 12.8 billion at year-end 2010. The € 27 million increase, principally reflects an offsetting effect of exposure reduction and model recalibrations resulting from the ongoing integration of Postbank as well as further de-risking activities and regular parameter reviews especially in light of the current market environment.

### Market Risk

- Nontrading market risk economic capital usage totaled € 7.3 billion as of December 31, 2011, which is € 0.5 billion, or 8 % above the Group's economic capital usage at year-end 2010.
- The economic capital usage for trading market risk totaled € 4.7 billion at year-end 2011 compared with € 6.4 billion at year-end 2010. The decrease was driven by broad risk reduction as well as defensive positioning across all asset classes.
- The average value-at-risk of the Corporate & Investment Bank Group Division was € 71.8 million in 2011, compared to € 95.6 million per 2010. The decrease in average value-at-risk in 2011 was driven primarily by broad risk reduction.



### Operational Risk

- The economic capital usage for operational risk increased by € 1.2 billion, or 32 %, to € 4.8 billion as of December 31, 2011. The increase is primarily due to the implementation of a new safety margin applied in the Group's AMA model, intended to cover unforeseen legal risks from the current financial crisis.

### Liquidity Risk

- Liquidity Reserves (excluding Postbank) increased year-on-year by € 69 billion to € 219 billion as of December 31, 2011.
- 2011 issuance activities (excluding Postbank) amounted to € 22.5 billion as compared to a planned volume of € 19 billion.
- 59 % of the bank's overall funding came from the most stable funding sources including long-term issuance, retail and transaction banking deposits.

### Capital Management

- The Core Tier 1 capital ratio, which excludes hybrid instruments, was 9.5 % at the end of 2011 (subsequent to introduction of Basel 2.5 framework), above the European Banking Authority (EBA) threshold of 9 % required by June 30, 2012, and was 8.7 % at year-end 2010. The later was calculated under Basel 2 regulation and the comparative Core Tier 1 capital ratio for year-end 2011 would have been 10.8 %.
- The internal capital adequacy ratio, signifying whether the total capital supply is sufficient to cover the capital demand determined by the Group's risk positions, increased to 159 % as of December 31, 2011, compared to 147 % as of December 31, 2010.
- Risk-weighted assets increased by € 35 billion to € 381 billion at the end of 2011, mainly driven by an increase of € 54 billion due to the introduction of Basel 2.5, and a € 13 billion increase in risk weighted assets from operational risk. These increases were partially offset by reductions in credit and market risk-weighted assets, principally as a result of the Group's de-risking efforts.

### Balance Sheet Management

- As of December 31, 2011, the Group's leverage ratio according to its target definition was 21, decreased from 23 at the end of 2010, and below its target leverage ratio of 25.

## 4.1 Risk and Capital Management Principles and Organization

### Risk Management Principles

The Group actively takes risks in connection with its business and as such the following principles underpin risk management within the Group:

- 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.
- Risk should be continuously monitored and
- A strong risk management culture helps reinforcing Deutsche Bank's resilience.

The Group expects its employees to behave in a manner that maintains a strong risk culture by taking a holistic approach to managing risk and return and by effectively managing the bank's risk, capital and reputational profile. The consideration of risk is consequently inherent in the Group's compensation philosophy and is monitored on an ongoing basis, as detailed in the Group's "Remuneration Report".

### Risk Management Framework

The wide variety of the Group's businesses requires to identify, measure, aggregate and manage its risks effectively, and to allocate its capital among its businesses appropriately. The Group operates as an integrated group through its divisions, business units and infrastructure functions. 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:

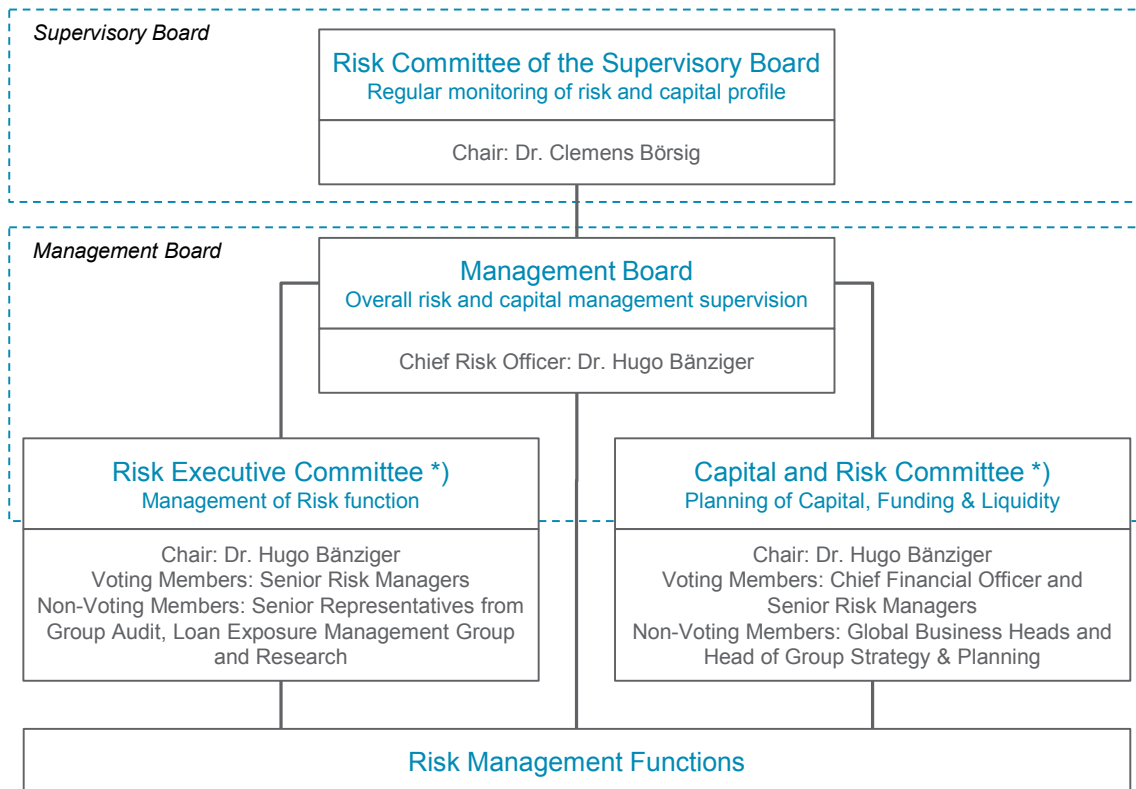
- The Management Board provides overall risk & capital management supervision for the consolidated Group.
- The Group operates a three-line of defense risk management model whereby business management, risk management oversight and assurance roles are played by functions independent of one another.
- Risk strategy and risk appetite are defined based on the Group's strategic plans in order to align risk, capital, and performance targets.
- Reviews will be conducted across the Group to verify that sound risk management practices and a holistic awareness of risk exists across the organization and to help each business manage the balance between their risk appetite and reward.
- All major risk classes are managed via risk management processes, including: credit risk, market risk, operational risk, liquidity risk, business risk, reputational risk and risk concentrations.
- Where applicable modeling and measurement approaches for quantifying risk and capital demand are implemented across the major risk classes.
- Effective systems, processes and policies are a critical component of the Group's risk management capability.

Comparable risk management principles are in place at Postbank and are reflected in its own organizational setup.

## Risk Governance

The following chart provides an overview of the risk management governance structure of the Deutsche Bank Group.

### Risk and Capital Management – Schematic Overview of Governance Structure at Group Level



\*) Supported by several Sub-Committees

The Risk Committee of the Supervisory Board regularly monitors the risk and capital profile of the Group.

The Management Board is responsible for independently managing the company with the objective of creating sustainable value in the interest of its shareholders, employees and other stakeholders. The Board has exclusive responsibility for the day-to-day management of Deutsche Bank Group. It is responsible for defining and implementing comprehensive and aligned business and risk strategies for the Group, as well as establishing well-defined risk management functions and guidelines. The Management Board has delegated certain functions and responsibilities to relevant governance committees, in particular the Risk Executive Committee (Risk ExCo) and Capital and Risk Committee (CaR) chaired by the Group's Chief Risk Officer.

The Group's Chief Risk Officer (CRO), who is a member of the Management Board, and is responsible for the identification, assessment, management and reporting of risks arising within operations across all businesses and risk types. The below functional committees are central to the Risk function.

- The Capital and Risk Committee oversees and controls integrated planning and monitoring of the Group's risk profile and capital capacity, ensuring an alignment of risk appetite, capitalization requirements and funding needs with the Group, divisional and sub-divisional business strategies.
- The Risk Executive Committee identifies controls and manages all risks including risk concentrations at the Group. To fulfill this mandate, the Risk Executive Committee is supported by sub-committees that are responsible for dedicated areas of risk management, including several policy committees and the Group Reputational Risk Committee.
- The Cross Risk Review Committee supports the Risk Executive Committee and the Capital and Risk Committee with particular emphasis on the management of Group wide risk patterns. The Cross Risk Review Committee, under a delegation of authority from the Capital and Risk Committee has responsibility for the day-to-day oversight and control of Deutsche Bank Group's Internal Capital Adequacy Assessment Process ("ICAAP") ensuring compliance with respective regulatory requirements and policy setting for local ICAAPs.

Multiple members of the Capital and Risk Committee are also members of the Group Investment Committee, ensuring a close link between both committees as proposals for strategic investments are analyzed by the Group Investment Committee. Depending on the size of the strategic investment it may require approval from the Group Investment Committee, the Management Board or even the Supervisory Board. The development of the strategic investments is monitored by the Group Investment Committee on a regular basis.

Dedicated Risk units are established with the mandate to:

- Ensure that the business conducted within each division is consistent with the risk appetite that the Capital and Risk Committee has set within a framework established by the Management Board;
- Formulate and implement risk and capital management policies, procedures and methodologies that are appropriate to the businesses within each division;
- Approve credit, market and liquidity risk limits;
- Conduct periodic portfolio reviews to ensure that the portfolio of risks is within acceptable parameters; and
- Develop and implement risk and capital management infrastructures and systems that are appropriate for each division.

The heads of the Group's Risk units, who are members of the Group's Risk Executive Committee, are responsible for the performance of the risk management units and report directly to the Group's Chief Risk Officer.

An Enterprise-wide Risk Management ("ERM") unit plays a role in monitoring the portfolio of risk against the appetite articulated in the capital plan and manages cross-risk initiatives in the Group. The objectives of the ERM unit are to:

- Develop a comprehensive view of the risks across the businesses in the bank and to focus on cross-risk concentrations and risk-reward "hotspots";
- Provide a strategic and forward-looking perspective on the key risk issues for discussion at senior levels within the bank (risk appetite, stress testing framework);
- Strengthen risk culture in the bank; and
- Foster the implementation of consistent risk management standards across the Group's local entities.

The Finance and Audit departments operate independently of both the group divisions and of the Risk function. The role of the Finance department is to help quantify and verify the risk that the Group assumes and ensures the quality and integrity of the Group's risk-related data. The Audit department performs risk-oriented reviews of the design and operating effectiveness of the Group's system of internal controls.

A joint Deutsche Bank and Postbank forum was established in 2011 to align both entities on critical risk-return decision, to exchange risk and portfolio related expertise and to address regulatory topics. This regular forum, in particular facilitates alignment on risk management and control process on a Group level. In addition Postbank's Group wide risk management organization independently measures and evaluates all key risks and their drivers. Postbank's Chief Risk Officer role has been established at its Management Board level since March 1, 2011.

The key risk management committees of Postbank, in all of which Postbank's Chief Risk Officer is a voting member, are:

- The Bank Risk Committee, which advises Postbank's Management Board with respect to the determination of overall risk appetite and risk allocation.
- The Credit Risk Committee, which is responsible for limit allocation and the definition of an appropriate limit framework.
- The Market Risk Committee, which decides on limit allocations as well as strategic positioning of Postbank's banking book and the management of liquidity risk.
- The Operational Risk Committee which defines the appropriate risk framework as well as the capital allocation for the individual business areas.

### Risk Reporting and Measurement Systems

The Group has centralized risk data and systems supporting regulatory reporting and external disclosures, as well as internal management reporting for credit, market, operational and liquidity risk. The risk infrastructure incorporates the relevant legal entities and business divisions and provides the basis for tailor-made reporting on risk positions, capital adequacy and limit 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 ensuring sufficient quality and integrity of risk-related data.

The main reports on risk and capital management that are used to provide the central governance bodies with information relating to Group risk exposures are the following:

- The Group's Risk & Capital Profile which is presented monthly to the CaR and the Management Board by the CRO. It comprises an overview of the current risk, capital and liquidity situation of the Group incorporating information on regulatory capital and economic capital adequacy.
- An overview of the Group's capital, liquidity and funding is presented to the CaR by the Group Treasurer every month. It comprises information on key developments and metrics across the aforementioned topics.
- Group-wide macro stress tests are performed quarterly and reported to the CaR. These are supplemented, as required, by ad-hoc stress tests at the Group level.

The above reports are complemented by several other standard and ad-hoc management reports of Risk and Finance, which are presented to several different senior committees responsible for risk and capital management at Group level.

Postbank continues to have an own reporting framework that substantially follows the same principles as outlined above.

## 4.2 Risk Strategy and Appetite

The Group's risk strategy statement is expressed as follows:

- balanced performance across business units;
- positive development of earnings quality;
- compliance with regulatory capital requirements;
- capital adequacy; and
- stable funding and strategic liquidity allowing for business planning within the liquidity risk tolerance and regulatory requirements.

The Group defines its risk strategy and risk appetite on the basis of the strategic plans to ensure alignment of risk, capital and performance targets.

The Group conducts an annual strategic planning process which considers its future strategic direction, decisions on key initiatives and the allocation of resources to the businesses. The Group's plan comprises profit and loss, capital supply and capital demand, other resources, such as headcount, and business-specific key performance indicators. This process is performed at the business division and business unit level covering the next three years, projected onto a five-year period for purposes of the goodwill impairment test. In addition, the first year is detailed on a month by month basis (operative plan). Group Strategy & Planning and Finance coordinate the strategic planning process and present the resulting strategic plan to the Group Executive Committee and Management Board for discussion and final approval. The final plan is also presented to the Supervisory Board at the beginning of each year.

The Group's strategic plans include the Risk & Capital Plan and risk appetite, which allows the Group to:

- set capital adequacy goals with respect to risk, considering the Group's strategic focus and business plans;
- assess the Group's risk-bearing capacity with regard to internal and external requirements (i.e. regulatory and economic capital); and
- apply stress testing to assess the impact on the capital demand, capital base and liquidity position.

Risk appetite is an expression of the maximum level of risk that the Group is prepared to accept in order to deliver its business objectives. The risk appetite statement defines the Group-level risk tolerance that is translated into financial targets for business divisions and risk limits, targets or measures for major risk categories throughout the Group. The setting of the risk appetite thus ensures that risk is proactively managed to the level

desired by the Management Board and shareholders and is congruent with the Group's overall risk appetite statement. The Management Board reviews and approves the risk appetite on an annual basis to ensure that it is consistent with the Group strategy, business environment and stakeholder requirements. Risk appetite tolerance levels are set at different trigger levels, with clearly defined escalation and action schemes. In cases where the tolerance levels are breached, it is the responsibility of the Enterprise-wide Risk Management unit to bring it to the attention of respective risk committees, and ultimately the Chief Risk Officer.

Amendments to the risk and capital strategy must be approved by the Chief Risk Officer or the full Management Board, depending on significance.

At Postbank, similar fundamental principles are in place. Postbank's Management Board is responsible for Postbank's risk profile and risk strategy, and regularly reporting thereon to the Supervisory Board of Postbank. During 2011, Postbank's capital demand, capital planning procedures and risk strategy processes have been aligned with those of Deutsche Bank.

## 4.3 Categories, Quantification and Reporting of Risk

### Risk Inventory

As part of its business activities, the Group faces a variety of risks, the most significant of which are described further in dedicated sections below. These risks can be categorized in a variety of ways. From a regulatory perspective, the Group holds regulatory capital against three types of risk: credit risk, market risk and operational risk. As part of its capital adequacy assessment process the Group calculates the amount of economic capital that is necessary to cover the risks generated from its business activities, outside of liquidity risk.

#### Credit Risk

Credit risk arises from all transactions where actual, contingent or potential claims against any counterparty, borrower or obligor (which the Group refers to collectively as "counterparties") exist, including those claims that the Group plans to distribute (see below in the more detailed chapters concerning credit risk). These transactions are typically part of the Group's traditional non-traded lending activities (such as loans and contingent liabilities), or its direct trading activity with clients (such as OTC derivatives, FX forwards and Forward Rate Agreements).

The Group distinguishes between three kinds of credit risk:

- Default risk is the risk that counterparties fail to meet contractual payment obligations.
- Country risk is the risk that the Group may suffer a loss, in any given country, due to any of the following reasons: a possible deterioration of economic conditions, political and social upheaval, nationalization and expropriation of assets, government repudiation of indebtedness, exchange controls and disruptive currency depreciation or devaluation. Country risk includes transfer risk which arises when debtors are unable to meet their obligations owing to an inability to transfer assets to non-residents due to direct sovereign intervention.

- Settlement risk is the risk that the settlement or clearance of transactions will fail. It arises whenever the exchange of cash, securities and/or other assets is not simultaneous.

### Market Risk

Market risk is defined as the potential for change in the market value of the Group's trading and investing positions. Risk can arise from adverse 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. The Group differentiates between three substantially different types of market risk:

- Trading market risk arises primarily through the market-making activities of the Corporate & Investment Bank Group 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.
- Nontrading market risk arises in various forms. Equity risk arises primarily from non-consolidated strategic investments, alternative asset investments and equity compensation. Interest rate risk stems from the Group's nontrading asset and liability positions. Structural foreign exchange risk exposure arises from capital and retained earnings in non-euro currencies in certain subsidiaries, and represents the bulk of foreign exchange risk in the Group's nontrading portfolio. Other nontrading market risk elements are risks arising from asset management and fund related activities as well as model risks in Private Business Clients ("PBC"), Global Transaction Banking ("GTB") and Private Wealth Management ("PWM"), which are derived by stressing assumptions of client behavior in combination with interest rate movements. In Deutsche Bank, excluding Postbank, these risks are part of nontrading market risk.

### Operational Risk

Operational risk is the potential for failure (including from legal risk) in relation to employees, contractual specifications and documentation, technology, infrastructure failure and disasters, external influences and customer relationships. Operational risk excludes business and reputational risk.



### Liquidity Risk

Liquidity risk is the risk arising from the Group's potential inability to meet all payment obligations when they come due or only being able to meet these obligations at excessive costs.

### Business Risk

Business risk describes the risk the Group assumes due to potential changes in general business conditions, such as the Group's market environment, client behavior and technological progress. This can affect the Group's results if it fails to adjust quickly to these changing conditions.

In addition to the above risks, the Group faces a number of other types of risks, such as reputational risk, insurance-specific risk and concentration risk. They are substantially related to one or more of the above risk types.

### Reputational Risk

Within its risk management processes, the Group defines reputational risk as the risk that publicity concerning a transaction, counterparty or business practice involving a client will negatively impact the public's trust in the Group's organization.

Several policies and guidelines form the framework of the Group's reputational risk management. The primary responsibility for the identification, escalation and resolution of reputational risk issues resides with the business divisions. The risk management units assist and advise the business divisions in ascertaining that reputational risk issues are appropriately identified, escalated and addressed.

The most senior dedicated body for reputational risk issues is the Group Reputational Risk Committee ("GRRC"). It is a permanent sub-committee of the Risk Executive Committee and is chaired by the Chief Risk Officer. The GRRC reviews and makes final determinations on all reputational risk issues, where escalation of such issues is deemed necessary by senior business and regional management, or required under other Group policies and procedures.

### Insurance Specific Risk

The Group's exposure to insurance risk relates to Abbey Life Assurance Company Limited and the defined benefit pension obligations of Deutsche Bank Group. In its risk management framework, the Group considers insurance-related risks primarily as non-traded market risks. The Group monitors the underlying assumptions in the calculation of these risks regularly and seeks risk mitigating measures such as reinsurances, if the Group deems this appropriate. The Group is primarily exposed to the following insurance-related risks.

— **Longevity risk.** The risk of faster or slower than expected improvements in life expectancy on immediate and deferred annuity products.

- **Mortality and morbidity risks.** The risks of a higher or lower than expected number of death or disability claims on assurance products and of an occurrence of one or more large claims.
- **Expenses risk.** The risk that policies cost more or less to administer than expected.
- **Persistency risk.** The risk of a higher or lower than expected percentage of lapsed policies.

To the extent that actual experience is less favorable than the underlying assumptions, or it is necessary to increase provisions due to more onerous assumptions, the amount of capital required in the insurance entities may increase.

### Risk Concentration

Risk Concentrations are not an isolated risk type but are integrated in the management of the individual risk types and at a cross risk level through Enterprise-wide Risk Management. Risk concentrations refer to a bank's loss potential through unbalanced distribution of dependencies on specific risk drivers. Risk concentrations are encountered within and across counterparties, businesses, regions/countries, legal entities, industries and products, impacting the aforementioned risks.

The Group has established a comprehensive approach to managing risk concentrations that primarily encompasses the following key elements:

- Intra-risk category reviews, generally undertaken by the Portfolio Management areas, are used to identify and understand the drivers of concentrations within a risk category.
- Reviews of business units and legal entities may identify risk concentrations which are discussed and dependent on materiality escalated up to the Management Board level.
- Expert panels, using qualitative instruments, which focus on intra-risk and enterprise-wide risk issues, concentrations and portfolios of overlapping risk characteristics such as – but not limited to – interdependencies between credit, market, liquidity and operational risks, as well as ensuring that the Group's risk profile remains in-line with the overall risk strategy, risk appetite and capital plans.
- Quantitative instruments such as regulatory or economic capital (overall risk measurement) and stress tests; and
- Comprehensive monitoring and reporting.

The most senior governance body for the oversight of risk concentrations is the Cross Risk Review Committee.

## Risk Management Tools

The Group uses a comprehensive range of quantitative and qualitative methodologies for assessing and managing risks. As a matter of policy, the Group continually assesses the appropriateness and the reliability of its quantitative tools and metrics in light of the changing risk environment. Some of these tools are common to a number of risk categories, while others are tailored to the particular features of specific risk categories. The advanced internal tools and metrics the Group currently uses to measure, manage and report its risk are:

- **Economic capital.** Economic capital measures the amount of capital the Group needs to absorb very severe unexpected losses arising from its exposures. “Very severe” in this context means that economic capital is set at a level to cover with a probability of 99.98 % the aggregated unexpected losses within one year. The Group calculates economic capital for the default risk, transfer risk and settlement risk elements of credit risk, for market risk including traded default risk, for operational risk and for general business risk. The Group continuously reviews and enhances its economic capital model as appropriate. It uses economic capital to show an aggregated view of its risk position from individual business lines up to its consolidated Group level. In addition, the Group considers economic capital, in particular for credit risk, when the Group measures the risk-adjusted profitability of its client relationships. For consolidation purposes Postbank economic capital has been calculated on a basis consistent with Deutsche Bank methodology. Postbank uses the same tool and methodology to calculate credit economic capital. See Chapter 4.6 “Economic Capital Requirements” below for a quantitative summary of the Group’s economic capital usage. Using a similar concept, Postbank also quantifies its capital demand arising from severe unexpected losses, referring to it as “risk capital”. In doing so, Postbank uses uniform parameters to measure individual risks that have been classified as material. These parameters are oriented on the value-at-risk approach, using the loss (less the expected gain or loss) that will not be exceeded for a 99.93 % level of probability within the given holding period which is usually one year but for market risk set at 90 days.
- **Expected loss.** The Group uses expected loss as a measure of its credit and operational risk. Expected loss is a measurement of the loss the Group can expect within a one-year period from these risks as of the respective reporting date, based on the Group’s historical loss experience. When calculating expected loss for credit risk, the Group takes into account credit risk ratings, collateral, maturities and statistical averaging procedures to reflect the risk characteristics of the Group’s different types of exposures and facilities. All parameter assumptions are based on statistical averages of up to seven years based on the Group’s internal default and loss history as well as external benchmarks. The Group uses expected loss as a tool of its risk management process and as part of its management reporting systems. The Group also considers the applicable results of the expected loss calculations as a component of its collectively assessed allowance for credit losses included in the Group’s financial statements. For operational risk the Group determines the expected loss from statistical averages of its internal loss history, recent risk trends as well as forward looking expert estimates. Postbank applies a similar concept.
- **Value-at-risk.** The Group uses the value-at-risk approach to derive quantitative measures for its trading book market risks under normal market conditions. The Group’s value-at-risk figures play a role in both internal and external (regulatory) reporting. For a given portfolio, value-at-risk measures the potential future loss (in terms of market value) that, under normal market conditions, will not be exceeded with a defined confidence level in a defined period. The value-at-risk for a total portfolio represents a measure of the Group’s diversified market risk (aggregated, using pre-determined correlations) in that portfolio. At Postbank, the value-at-risk approach is used for both the trading book and the banking book.

— **Stress testing.** Credit, market and operational risk as well as liquidity risk are subject to a program of regular stress tests. The Cross Risk Review Committee oversees the inventory of stress tests used for managing the Group's risk appetite, reviews the results and proposes management action, if required. The Cross Risk Review Committee monitors the effectiveness of the stress test process and drives continuous improvement of the Group's stress testing framework. It is supported by a dedicated Stress Testing Oversight Committee which has the responsibility for the definition of the Group-wide stress test scenarios, ensuring common standards and consistent scenarios across risk types, and reviewing the Group-wide stress test results. The stress testing framework at Group level comprises regular group-wide stress based on a consistent macroeconomic global downturn scenario, annual reverse and capital plan relevant stress test as well as ad-hoc scenarios.

The Group also supplements its risk type specific analysis of credit, market, operational and liquidity risk with stress testing. For credit risk management purposes, the Group performs stress tests to assess the impact of changes in general economic conditions or specific parameters on its credit exposures or parts thereof as well as the impact on the creditworthiness of the Group's portfolio. For market risk management purposes, the Group performs stress tests because value-at-risk calculations are based on relatively recent historical data, only purport to estimate risk up to a defined confidence level and assume good asset liquidity. Therefore, they only reflect possible losses under relatively normal market conditions. Stress tests help the Group determine the effects of potentially extreme market developments on the value of its market risk sensitive exposures, both on the Group's highly liquid and less liquid trading positions as well as its investments. The correlations between market risk factors used in the Group's current stress tests are estimated from historic volatile market conditions and proved to be consistent with those observed during recent periods of market stress. The Group uses stress testing to determine the amount of economic capital the Group needs to allocate to cover its market risk exposure under the scenarios of extreme market conditions the Group selects for its simulations. For operational risk management purposes, the Group performs stress tests on its economic capital model to assess its sensitivity to changes in key model components, which include external losses. For liquidity risk management purposes, the Group performs stress tests and scenario analysis to evaluate the impact of sudden stress events on its liquidity position. At Postbank all material and actively managed risk categories (credit, market, liquidity and operational risks) are subject to defined stress tests. Postbank was also integrated into Deutsche Bank group wide capital stress test during 2011.

— **Regulatory risk assessment.** The Group's operations throughout the world are regulated and supervised by relevant authorities in each of the jurisdictions in which it conducts business. Such regulation relates to licensing, capital adequacy, liquidity, risk concentration, conduct of business as well as organizational and reporting requirements. Primarily, the Group is subject to comprehensive regulation and supervision by the BaFin and the Deutsche Bundesbank (referred to as "Bundesbank"), the German central bank. The BaFin supervises the operations of German banks to ensure that they are in compliance with the German Banking Act and other applicable laws and regulations. The Bundesbank supports the BaFin and closely cooperates with it. The German Banking Act and the rules and regulations thereunder implement certain recommendations of the Basel Committee on Banking Supervision, as well as certain European Union directives relating to banks. It addresses issues such as regulatory capital, risk-based capital adequacy and consolidated supervision.

## 4.4 Capital Management

The Group's Treasury function manages the capital at Group level and locally in each region, except that Post-bank manages its capital on a group level and locally on its own. The allocation of financial resources, in general, and capital, in particular, favors business portfolios with the highest positive impact on the Group's profitability and shareholder value. As a result, Treasury periodically reallocates capital among business portfolios.

Treasury implements the Group's capital strategy, which itself is developed by the Capital and Risk Committee and approved by the Management Board, including the issuance and repurchase of shares. The Group is committed to maintain its sound capitalization. Overall capital demand and supply are constantly monitored and adjusted, if necessary, to meet the need for capital from various perspectives. These include book equity based on IFRS accounting standards, regulatory capital and economic capital.

The allocation of capital, determination of the Group's funding plan and other resource issues are framed by the Capital and Risk Committee.

Regional capital plans covering the capital needs of the Group's branches and subsidiaries are prepared on a semi-annual basis and presented to the Group Investment Committee. Most of the Group's subsidiaries are subject to legal and regulatory capital requirements. Local Asset and Liability Committees attend to those needs under the stewardship of regional Treasury teams. Furthermore, they safeguard compliance with requirements such as restrictions on dividends allowable for remittance to Deutsche Bank AG or on the ability of its subsidiaries to make loans or advances to the parent bank. In developing, implementing and testing its capital and liquidity, the Group takes such legal and regulatory requirements into account.

The Group's core currencies are euro, U.S. dollar and pound sterling. Treasury manages the sensitivity of its capital ratios against swings in core currencies. The capital invested into the Group's foreign subsidiaries and branches in non-core currencies is largely hedged against foreign exchange swings, except for the Chinese yuan which the Group currently does not hedge. Treasury determines which currencies are to be hedged, develops suitable hedging strategies and finally executes these hedges.

Treasury is represented on the investment committee of the largest Deutsche Bank pension fund which sets the investment guidelines. This representation ensures that pension assets are aligned with pension liabilities, thus protecting the bank's capital base.

Treasury constantly monitors the market for liability management trades. Such trades represent an anticyclical opportunity to create Core Tier 1 capital by buying back Deutsche Bank's issuances below par.

The Core Tier 1 capital ratio amounted to 9.5% at year-end 2011. It is already above the 9% level proposed by the European Banking Authority (EBA) and agreed by the European Council for the EU-Wide Capital Exercise, ahead of the June 30, 2012 deadline. It also covers the shortfall of € 388 million in relation to European Economic Area sovereign exposure which was determined as at September 30, 2011 solely for the purposes of the EU-Wide Capital Exercise. The Group will strive to adhere to the 9% threshold by June 30, 2012.

In the first quarter 2011, the Group changed the methodology used for allocating average active equity to the business segments and to Consolidation & Adjustments in proportion to their regulatory requirements. Under the new methodology economic capital as basis for allocation is substituted by risk weighted assets and certain regulatory capital deduction items. All other items of the capital allocation framework remain unchanged. The total amount allocated continues to be determined based on the higher of the Group's overall economic risk exposure or regulatory capital demand. In 2011, the Group derives its internal demand for regulatory capital assuming a Tier 1 ratio of 10.0%. If the Group's average active equity exceeds the higher of the overall economic risk exposure or the regulatory capital demand, this surplus is assigned to Consolidation & Adjustments.

This enables the Group to assess each business unit's risk-adjusted profitability, which is a key metric in managing the financial resources in order to optimize the value generated for the Group's shareholders. Active book equity is defined as shareholders' equity adjusted by unrealized net gains (losses) on assets available for sale, fair value adjustments on cash flow hedges (both components net of applicable taxes) and dividends, for which a proposal is accrued on a quarterly basis and for which payments occur once a year following the approval by the Annual General Meeting.

During the period from the 2010 Annual General Meeting (May 27, 2010) until the 2011 Annual General Meeting (May 26, 2011), 28.5 million shares were purchased, of which 0.5 million were purchased via sold put options which were executed by the counterparty at maturity date. 22.0 million of the shares purchased were used for equity compensation purposes and 6.5 million shares were used to increase the Group's Treasury position for future equity compensation. 9.8 million shares were purchased from January 1, 2011 until May 26, 2011, none of which via sold put options. In addition, 10.0 million physically settled call options were purchased in first quarter 2011 to hedge existing equity compensation awards. These call options have a remaining maturity of more than 18 months and were purchased under the above mentioned authorization from the Annual General Meeting to buy back shares by using derivatives. In second quarter 2011, the Group restructured 15.3 million existing call options in order to allow physical settlement according to the above mentioned authorization. These call options have a remaining maturity below 18 months. As of the 2011 Annual General Meeting, the number of shares held in Treasury from buybacks totaled 7.6 million.

The 2011 Annual General Meeting granted the Group's management board the authority to buy back up to 92.9 million shares before the end of November 2015. Thereof 46.5 million shares can be purchased by using derivatives. These authorizations replaced the authorizations of the 2010 Annual General Meeting. During the period from the 2011 Annual General Meeting until December 31, 2011, 27.4 million shares were purchased, thereof 10.9 million of the shares purchased were used for equity compensation purposes and 16.5 million shares were used to increase the Group's Treasury position for future equity compensation. As of December 31, 2011, the number of shares held in Treasury from buybacks totaled 24.1 million.

To take advantage of Deutsche Bank's low share price in the third quarter 2011, Treasury unwound the 10.0 million physically settled call options purchased in first quarter 2011 and entered into new 10.0 million physically settled call options with significant lower strike prices. These call options were purchased under the authorization by the 2011 Annual General Meeting. From the 10.0 million call options, 6.0 million have a remaining maturity of more than 18 months. In addition to these 10.0 million call options, Treasury restructured additional call options to further hedge the Group's obligation to deliver shares for equity compensation purposes.

Total outstanding hybrid Tier 1 capital (substantially all noncumulative trust preferred securities) as of December 31, 2011, amounted to € 12.7 billion compared to € 12.6 billion as of December 31, 2010. This increase was mainly due to the foreign exchange effects of the strengthened U.S. dollar to the U.S. dollar denominated hybrid Tier 1 capital. In 2011, the Group neither raised nor redeemed any hybrid Tier 1 capital.

In 2011, the Group did not issue any lower Tier 2 capital (qualified subordinated liabilities). Profit participation rights amounted to € 1.2 billion as of December 31, 2011, unchanged to December 31, 2010. Total lower Tier 2 capital as of December 31, 2011, amounted to € 9.4 billion compared to € 10.7 billion as of December 31, 2010. Cumulative preferred securities amounted to € 0.3 billion as of December 31, 2011, unchanged to December 31, 2010.

### Capital Management at Postbank

Postbank manages its capital by continuously monitoring capital supply and demand. Capital management aims at regulatory as well as at economic capital adequacy, in line with the concept of risk bearing capacity. In general, the capital allocation requires an appropriate return on regulatory capital demand. The capital allocation is approved by Postbank's Management Board based on a multi-year plan.

The regulatory and economic capital demand is continuously monitored to adjust the available capital if required. Capital demand forecasts are regularly determined and carried forward based on the planned development of the business volume and results as well as expected risk parameter changes. Capital ratios are managed in compliance with the Postbank's Management Board approved statutory guidelines, by steering the existing and new transaction volume, by issuance of Tier 1 and Tier 2 capital instruments or by executing risk mitigating capital market transactions.

## 4.5 Balance Sheet Management

The Group manages its balance sheet on a Group level excluding Postbank and, where applicable, locally in each region. In the allocation of financial resources the Group favors business portfolios with the highest positive impact on its profitability and shareholder value. The Group's balance sheet management function has the mandate to monitor and analyze balance sheet developments and to track certain market-observed balance sheet ratios. Based on this the Group triggers discussion and management action by the Capital and Risk Committee. While the Group monitors IFRS balance sheet developments, its balance sheet management is principally focused on adjusted values as used in its leverage ratio target definition, which is calculated using adjusted total assets and adjusted total equity figures.

Similarly Postbank follows a value-oriented financial management approach that includes balance sheet management.

**Leverage Ratio (Target Definition):** The Group calculates its leverage ratio as a non-GAAP financial measure by dividing total assets by total equity. The Group discloses an adjusted leverage ratio, which is calculated using a target definition, for which the following adjustments are made to the reported IFRS assets and equity:

- Total assets under IFRS are adjusted to reflect additional netting provisions to obtain total assets adjusted. Under IFRS offsetting of financial assets and financial liabilities is required when an entity, (1) currently has a legally enforceable right to set off the recognized amounts; and (2) intends either to settle on a net basis, or to realize the asset and settle the liability simultaneously. IFRS specifically focuses on the intention to settle net in the ordinary course of business, irrespective of the rights in default. As most derivative contracts covered by a master netting agreement do not settle net in the ordinary course of business they must be presented gross under IFRS. Repurchase and reverse repurchase agreements are also presented gross, as they also do not settle net in the ordinary course of business, even when covered by a master netting agreement. It has been industry practice in the U.S. to net the receivables and payables on unsettled regular way trades. This is not permitted under IFRS. The Group makes the netting adjustments described above in calculating the target definition of the leverage ratio.
- Total equity under IFRS is adjusted to reflect pro-forma fair value gains and losses on the Group's own debt (post-tax, estimate assuming that substantially all of the Group's own debt was designated at fair value), to obtain total equity adjusted. The tax rate applied for this calculation is a blended uniform tax rate of 35%.

The Group applies these adjustments in calculating the leverage ratio according to the target definition to improve comparability with competitors. The target definition of the leverage ratio is used consistently throughout the Group in managing the business. There will still be differences in the way competitors calculate their leverage ratios compared to the Group's target definition of the leverage ratio. Therefore the Group's adjusted leverage ratio should not be compared to other companies' leverage ratios without considering the differences in the calculation. The Group's leverage ratio according to its target definition is not likely to be identical to, nor necessarily indicative of, what the Group's leverage ratio would be under any current or future bank regulatory leverage ratio requirement.



The following table presents the adjustments made in calculating the Group's leverage ratio according to the target definition.

**Table 8 Leverage Ratio**

in € bn.	Dec 31, 2011	Dec 31, 2010
<b>Total assets (IFRS)</b>	<b>2,164</b>	<b>1,906</b>
Adjustment for additional derivatives netting	(782)	(601)
Adjustment for additional pending settlements netting	(105)	(86)
Adjustment for additional reverse repo netting	(10)	(8)
<b>Total assets (adjusted)</b>	<b>1,267</b>	<b>1,211</b>
<b>Total equity (IFRS)</b>	<b>54.7</b>	<b>50.4</b>
Adjustment for pro-forma fair value gains (losses) on the Group's own debt (post-tax) <sup>1</sup>	4.5	2.0
<b>Total equity (adjusted)</b>	<b>59.2</b>	<b>52.4</b>
<b>Leverage ratio based on total equity</b>		
According to IFRS	40	38
According to target definition	21	23

<sup>1</sup> The estimated cumulative tax effect on pro-forma fair value gains (losses) on such own debt was € (2.4) billion and € (1.1) billion at December 31, 2011 and December 31, 2010, respectively.

As of December 31, 2011, on a consolidated basis the Group's leverage ratio according to the Group's target definition of 21 has further reduced compared to the prior year-end, and is well below the Group's leverage ratio target of 25. The Group's leverage ratio calculated as the ratio of total assets under IFRS to total equity under IFRS was 40 as of December 31, 2011, a slight increase compared to 38 at the end of 2010.

## 4.6 Economic Capital Requirements

The Group uses economic capital to show an aggregated management view of the risk position from individual business lines up to the consolidated Group level. In addition, the Group considers economic capital, in particular for credit risk, when measuring the risk-adjusted profitability of the Group's client relationships.

The table below shows the Group's total economic capital usage at December 31, 2011, and December 31, 2010, following the IFRS consolidation principles, calculated for credit, market, business and operational risk; it does not include liquidity risk. To determine the Group's overall economic capital usage, the Group generally considers diversification benefits across risk types except for business risk, which is aggregated by simple addition. The Group estimates the diversification benefits across risk types through application of a simulation model which combines loss distributions for credit, market and operational risk, considering the dependence of their key risk drivers.

**Table 9 Economic Capital Requirements**

in € m.	Dec 31, 2011	Dec 31, 2010
<b>Economic capital usage</b>		
Credit risk	12,812	12,785
Market Risk	12,003	13,160
Trading market risk	4,724	6,420
Nontrading market risk	7,278	6,740
Operational risk	4,846	3,682
Diversification benefit across credit, market and operational risk	(4,264)	(3,534)
<b>Sub-total credit, market and operational risk</b>	<b>25,397</b>	<b>26,093</b>
Business risk	980	1,085
<b>Total economic capital usage</b>	<b>26,377</b>	<b>27,178</b>

As of December 31, 2011, the Group's economic capital usage totaled € 26.4 billion, which is € 801 million, or 3%, below the € 27.2 billion economic capital usage as of December 31, 2010. The lower overall risk position was mainly driven by decreases in trading market risk economic capital reflecting risk reductions as well as defensive positioning, off-set by higher operational risk economic capital principally reflecting a new safety margin intended to cover unforeseen legal risks from the current financial crisis.

As of December 31, 2011, the economic capital usage included € 4.3 billion in relation to Postbank, which is € 259 million or 6% lower than the € 4.6 billion economic capital as at December 31, 2010. This decrease reflects de-risking effects, resulting in a credit risk economic capital reduction of € 1.3 billion, which was partially offset by parameter and model alignment related increases, also in credit risk related economic capital, of € 947 million.

The Group's economic capital usage for credit risk totaled € 12.8 billion as of December 31, 2011. The increase of € 27 million, a change below 1%, primarily reflects the effects from the Group's risk reduction initiatives, compensated by the impact from regular recalibrations of the credit risk parameters and other refinements of the credit risk model mainly in relation to Postbank.

The Group's economic capital usage for market risk decreased by € 1.2 billion, or 9 %, to € 12.0 billion as of December 31, 2011. The reduction was driven by trading market risk, which decreased by € 1.7 billion, or 26 %, primarily driven by the above mentioned risk reductions and defensive positioning resulting in a lower market risk profile. Non trading market risk economic capital usage increased by € 538 million, or 8 %, primarily reflecting the increase in strategic investment and structural FX positions, which was partially offset by lower economic capital for the Group's Guaranteed Funds portfolio as well as asset sales.

The Group's economic capital usage for operational risk increased by € 1.2 billion, or 32 %, to € 4.8 billion as of December 31, 2011. The increase is primarily due to the implementation of a new safety margin applied in the Group's AMA model, intended to cover unforeseen legal risks from the current financial crisis.

Business risk economic capital usage, consisting of a strategic risk and a tax risk component, totaled € 980 million as of December 31, 2011 reflecting a moderate reduction of € 105 million or 10 % in comparison to an economic capital usage of € 1.1 billion as of December 2010.

The diversification effect of the economic capital usage across credit, market and operational risk increased by € 729 million, or 21 %, as of December 31, 2011 mainly reflecting changes in risk classes as outlined above and the relatively low correlation of operational risk economic capital with both credit and market risk economic capital.

The table below shows the economic capital usage of the Group's business segments for the dates specified.

**Table 10 Economic Capital Requirements by Business Segment**

in € m.	Dec 31, 2011	Dec 31, 2010
Corporate & Investment Bank	14,469	16,119
Corporate Banking & Securities	13,175	14,828
Global Transaction Banking	1,294	1,291
Private Clients and Asset Management	8,897	9,394
Asset and Wealth Management	1,703	2,717
Private & Business Clients	7,193	6,677
Corporate Investments	1,618	902
Consolidation & Adjustments	1,393	762
<b>Total economic capital requirement</b>	<b>26,377</b>	<b>27,178</b>

The future allocation of economic capital may change to reflect refinements in the Group's risk measurement methodology.

## 5. Counterparty Credit Risk: Strategy and Processes

### 5.1 Credit Risk Management Principles and Strategy

The Group measures and manages its credit risk following the below philosophy and principles:

- The key principle of credit risk management is client credit due diligence, which is aligned with the Group's country and industry portfolio strategies. Prudent client selection is achieved in collaboration with the Group's business line counterparts who stand as a first line of defense. In each of the group divisions credit decision standards, processes and principles are consistently applied.
- The Group actively aims to prevent undue concentration and long tail-risks (large unexpected losses) by ensuring a diversified credit portfolio, effectively protecting the bank's capital in all market conditions. Client, industry, country and product-specific concentrations are actively assessed and managed against the Group's risk appetite.
- The Group aims to avoid large directional credit risk on a counterparty and portfolio level by applying stringent underwriting standards combined with a pro-active hedging and distribution model and collateralization of the Group's hold portfolio where feasible.
- The Group is selective in taking outright cash risk positions unless secured, guaranteed and/or adequately hedged. Exceptions to this general principle are lower risk, short-term transactions and facilities supporting specific trade finance business requests as well as low risk businesses where the margin allows for adequate loss coverage.
- The Group aims to secure its derivative portfolio through collateral agreements and may additionally hedge concentration risks to further mitigate credit risks from underlying market movements.
- Every extension of credit or material change to a credit facility (such as its tenor, collateral structure or major covenants) to any counterparty requires credit approval at the appropriate authority level. The Group assigns credit approval authorities to individuals according to their qualifications, experience and training, and reviews these periodically.
- The Group measures and consolidates its overall credit exposures to each obligor on a global basis that applies across the consolidated Group, in line with regulatory requirements of the German Banking Act (Kreditwesengesetz).

Postbank has comparable uniform standards in place.

### 5.2 Credit Risk Ratings and Rating Governance

#### Credit Risk Ratings

A basic and key element of the credit approval process is a detailed risk assessment of each credit-relevant counterparty. When rating a counterparty the Group applies in-house assessment methodologies, scorecards and the Group's 26-grade rating scale for evaluating the credit-worthiness of the counterparties. The majority of the Group's rating methodologies are authorized for use within the advanced internal rating based approach under applicable Basel rules. The Group's rating scale enables it to compare its internal ratings with common market practice and ensures comparability between different sub-portfolios of the Group. Several default ratings therein enable the Group to incorporate the potential recovery rate of unsecured defaulted counterparty exposures. The Group generally rates its counterparties individually, though certain portfolios of purchased or securitized receivables are rated on a pool basis.

In the Group's retail business, creditworthiness checks and counterparty ratings of the homogenous portfolio are derived by utilizing an automated decision engine. The decision engine incorporates quantitative aspects (e.g. financial figures), behavioral aspects, credit bureau information (such as SCHUFA in Germany) and general customer data. These input factors are used by the decision engine to determine the creditworthiness of the borrower and, after consideration of collateral evaluation, the expected loss as well as the further course of action required to process the ultimate credit decision. The established rating procedures the Group has implemented in its retail business are based on multivariate statistical methods and are used to support the individual credit decisions for this portfolio as well as managing the overall retail portfolio.

The algorithms of the rating procedures for all counterparties are recalibrated frequently on the basis of the default history as well as other external and internal factors and expert judgments.

Postbank makes use of internal rating systems authorized for use within the foundation internal rating based approach under Basel 2. Similar to the Group all internal ratings and scorings are based on a uniform master scale, which assigns each rating or scoring result to the default probability determined for that class.

### Rating Governance

For the Group, excluding Postbank, all rating methodologies have to be approved by the Group Credit Policy Committee ("GCPC"), a sub-committee of the Risk Executive Committee, before the methodologies are used for credit decisions and capital calculation for the first time or before they are significantly changed. Regulatory approval may be required in addition. The results of the regular validation processes as stipulated by internal policies have to be brought to the attention of the GCPC, even if the validation results do not lead to a change.

For Postbank, responsibility for design, implementation and monitoring of internal rating systems effectiveness rests with Postbank's Risk Analytics unit and Postbank's validation committee, chaired by Postbank's Credit Risk Officer. All rating systems are subject to Postbank's Management Board approval. Effectiveness of rating systems and rating results are reported to the Postbank Management Board on a regular basis.

## 5.3 Credit Limits and Approval

Credit limits set forth maximum credit exposures the Group is willing to assume over specified periods. In determining the credit limit for a counterparty the Group considers the counterparty's credit quality by reference to its internal credit rating. Credit limits are established by the Credit Risk Management function via the execution of assigned credit authorities. Credit authority is generally assigned to individuals as personal credit authority according to the individual's professional qualification and experience. All assigned credit authorities are reviewed on a periodic basis to ensure that they are adequate to the individual performance of the authority holder. The results of the review are presented to the Group Credit Policy Committee.

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 such as the CIB Underwriting Committee. Where personal and committee authorities are insufficient to establish appropriate limits the case is referred to the Management Board for approval.

At Postbank comparable credit limit standards and approval processes are in place.

## 5.4 Credit Risk Mitigation

In addition to determining counterparty credit quality and the Group's risk appetite, the Group also uses various credit risk mitigation techniques to optimize credit exposure and reduce potential credit losses. Credit risk mitigants, described more fully below, are applied in the following forms:

- Collateral held as security to reduce losses by increasing the recovery of obligations.
- Risk transfers, which shift the probability of default risk of an obligor to a third party including hedging executed by the Loan Exposure Management Group.
- Netting and collateral arrangements which reduce the credit exposure from derivatives and repo- and repo-style transactions.

### Collateral Held as Security for Loans

The Group regularly agrees on collateral to be received from or to be provided to customers in contracts that are subject to credit risk. The Group also regularly agrees on collateral to be received from borrowers in its lending contracts. 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 borrower default risk or improving recoveries in the event of a default. While collateral can be an alternative source of repayment, it generally does not replace the necessity of high quality underwriting standards.

The Group segregates collateral received into the following two types:

- Financial and other collateral, which enables the Group to recover all or part of the outstanding exposure by liquidating the collateral asset provided, in cases where the borrower is unable or unwilling to fulfill its primary obligations. Cash collateral, securities (equity, bonds), collateral assignments of other claims or inventory, equipment (e.g., plant, machinery, aircraft) and real estate typically fall into this category.
- Guarantee collateral, which complements the borrower'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 and risk participations typically fall into this category.

## Risk Transfers

Risk transfers to third parties form a key part of the Group's 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 the Loan Exposure Management Group ("LEMG"), in accordance with specifically approved mandates.

LEMG focuses on managing the residual credit risk of loans and lending-related commitments of the international investment-grade portfolio and the medium-sized German companies' portfolio within the Corporate & Investment Bank Group Division.

Acting as a central pricing reference, LEMG provides the respective Corporate & Investment Bank Group Division 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.

LEMG is concentrating on two primary initiatives within the credit risk framework to further enhance risk management discipline, improve returns and use capital more efficiently:

- to reduce single-name and industry credit risk concentrations within the credit portfolio and
- to manage credit exposures actively by utilizing techniques including loan sales, securitization via collateralized loan obligations, default insurance coverage and single-name and portfolio credit default swaps.

## Netting and Collateral Arrangements for Derivatives

Netting is predominantly applicable to OTC derivative transactions as outlined below. Netting is also applied to securities financing transactions as far as documentation, structure and nature of the risk mitigation allow netting with the underlying credit risk.

In order to reduce the credit risk resulting from OTC derivative transactions, where OTC clearing is not available, the Group regularly seeks 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 the Group's clients. A master agreement allows the netting of rights and obligations arising under derivative transactions that have been entered into under such master agreement upon the counterparty's default, resulting in a single net claim owed by or to the counterparty ("close-out netting"). For parts of the derivatives business (e.g., foreign exchange transactions) the Group also enters into master agreements under which the Group sets off amounts payable on the same day in the same currency and in respect to transactions covered by such master agreements ("payment netting"), reducing the Group's settlement risk. In its risk measurement and risk assessment processes the Group applies netting only to the extent it has satisfied itself of the legal validity and enforceability of the master agreement in all relevant jurisdictions.

Also, the Group enters into credit support annexes (“CSA”) to master agreements in order to further reduce its 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 the Group believes the annex is enforceable, it reflects this in its exposure measurement.

Certain CSAs to master agreements provide for rating dependent triggers, where additional collateral must be pledged if a party’s rating is downgraded. The Group also enters into master agreements that provide for an additional termination event upon a party’s rating downgrade. These downgrading provisions in CSAs and master agreements usually apply to both parties but may apply to the Group only. The Group analyzes and monitors its potential contingent payment obligations resulting from a rating downgrade in the Group’s stress testing approach for liquidity risk on an ongoing basis. For an assessment of the quantitative impact of a downgrading of the Group’s credit rating please refer to Table 68 “Stress Testing Results” in the Chapter 11 “Liquidity Risk”.

In order to reduce the credit risk resulting from OTC derivative transactions, Postbank regularly seeks the execution of standard master agreements (such as the German Master Agreement for Financial Derivative Transactions). Postbank applies netting only to the extent it has satisfied itself of the legal validity and enforceability of the master agreement in all relevant jurisdictions. In order to further reduce its derivatives-related credit risk, Postbank has entered into CSAs to master agreements with most of the key counterparties in its financial markets portfolio. As with netting, when Postbank believes the annex is enforceable, it reflects this in its capital requirements.

For purposes of calculating the regulatory requirements for its derivatives exposures Postbank uses the current exposure method, i.e. calculates its exposure at default as the sum of the net positive fair value of its derivatives transactions and the regulatory add-ons.

### 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.

The Group uses a comprehensive range of quantitative tools and metrics to monitor its credit risk mitigating activities. These also include monitoring of potential concentrations within collateral types supported by dedicated stress tests.

At Postbank a conservative approach is taken with respect to positive correlations between the borrower’s counterparty credit risk and the risk of a deterioration in the value of collateral. Postbank’s collateral acceptance and monitoring process takes risk concentrations into account when collateral is initially recognized. In particular, Postbank monitors guarantees together with the guarantors’ loans. In addition, risks relating to guarantees are explicitly taken into account as part of portfolio management.



Guarantees and credit derivative contracts are primarily entered into with banks and insurance companies (including exposures to monoline insurers which are discussed in more detail in the Chapter “Exposure to Monoline Insurers” in the Management Report of the Group’s Financial Report 2011), principally in Western Europe and the United States. The majority of these exposures carry a rating within the investment grade band. Postbank’s guarantees and credit derivative exposure are primarily entered with countries/regional governments as well as banks.

For the purpose of mitigating credit risk in its lending portfolios the Group also makes use of financial and other physical collateral. Reflecting the Group’s security financing activity, a significant portion of collateral taken relates to fixed income and equity securities. Further collateral is taken in form of cash and deposits as well as real estate. The real estate collateral principally consists of residential properties in Germany and is the main collateral class within Postbank.

To improve the collateral management Postbank intends to introduce a multi client capable collateral management system on Group level. A preliminary version was already rolled out. The implementation of a group wide collateral management system was started in 2011 for BHW portfolio; further roll out is planned for 2012.

## 5.5 Monitoring Credit Risk

Ongoing active monitoring and management of credit risk positions is an integral part of the Group’s credit risk management activities. Monitoring tasks are primarily performed by the divisional credit risk units in close cooperation with the business which acts as first line of defense, dedicated rating analysis teams and the Group’s portfolio management function.

Credit counterparties are allocated to credit officers within specified divisional risk units which are aligned to types of counterparty (such as financial institution or corporate) or economic area (i.e. emerging markets). The individual credit officers within these divisional risk units have the relevant expertise and experience to manage the credit risks associated with these counterparties and their associated credit related transactions. It is the responsibility of each credit officer to undertake ongoing credit monitoring for their allocated portfolio of counterparties. The Group also has 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 the Group has identified counterparties where problems might arise, the respective exposure is generally placed on a watchlist. The Group aims to identify counterparties that, on the basis of the application of the Group’s 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 the Group’s credit culture and is intended to ensure that greater attention is paid to such exposures.

At Postbank largely similar processes are in place.

A key focus of the credit risk management approach is to avoid any undue concentrations in the Group's portfolio. Significant concentrations of credit risk could be derived 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. A concentration of credit risk may also exist at an individual counterparty level. The Group's portfolio management framework supports a comprehensive assessment of concentrations within the credit risk portfolio for potential subsequent risk mitigating actions.

Managing industry and country risk are key components of the Group's overall concentration risk management approach for non-Postbank portfolios. In 2011 Postbank enhanced the management of concentrations in the credit area by systematically identifying credit concentration on the level of a single counterparty as well as on a sectoral level (e.g. industry sector, country, regions, product types).

### Industry Risk Management

To manage industry risk, the Group has grouped its corporate and financial institutions counterparties into various industry sub-portfolios. For each of these sub-portfolios an "Industry Batch report" is prepared usually on an annual basis. This report highlights industry developments and risks to the Group's credit portfolio, reviews concentration risks and incorporates an economic downside stress test. This analysis is used to define strategies for both the Group's industry portfolio, and individual counterparties within the portfolio based on their risk/reward profile and potential.

The Industry Batch reports are presented to the Group Credit Policy Committee, a sub-committee of the Risk Executive Committee and are submitted afterwards to the Management Board. In accordance with an agreed schedule, a select number of Industry Batch reports is also submitted to the Risk Committee of the Supervisory Board. In addition to these Industry Batch reports, the development of the industry sub-portfolios is regularly monitored during the year and is compared to the approved sub-portfolio strategies. Regular overviews are prepared for the Group Credit Policy Committee to discuss recent developments and to take action if necessary.

### Country Risk Management

Avoiding undue concentrations also from a regional perspective is an integral part of the Group's credit risk management framework. The Group manages country risk through a number of risk measures and limits, the most important being:

- **Total counterparty exposure.** All credit extended and OTC derivatives exposure to counterparties domiciled in a given country that the Group views as being at risk due to economic or political events ("country risk event"). It includes non-guaranteed subsidiaries of foreign entities and offshore subsidiaries of local clients.
- **Transfer risk exposure.** Credit risk arising where an otherwise solvent and willing debtor is unable to meet its obligations due to the imposition of governmental or regulatory controls restricting its ability either to obtain foreign exchange or to transfer assets to non-residents (a "transfer risk event"). It includes all of the Group's credit extended and OTC derivatives exposure from one of the Group's offices in one country to a counterparty in a different country.

— **Highly-stressed event risk scenarios.** The Group uses stress testing to measure potential risks on the trading positions and view these as market risk.

The Group's country risk ratings represent a key tool in the management of country risk. They are established by an independent country 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."
- **Event risk rating.** A measure of the probability of major disruptions in the market risk factors relating to a country.

All sovereign and transfer risk ratings are reviewed, at least annually, by the Cross Risk Review Committee, a sub-committee of the Group's Risk Executive Committee and Capital and Risk Committee. Deutsche Bank's country risk research group also reviews, at least semi-annually, the Group's ratings for the major emerging markets countries. Ratings for countries that the Group views as particularly volatile, as well as all event risk ratings, are subject to continuous review.

The Group also regularly compares its internal risk ratings with the ratings of the major international rating agencies.

Country risk limits are reviewed annually, in conjunction with the review of country risk ratings. Country risk limits are set by either the Group's Management Board or by the Group's Cross Risk Review Committee, pursuant to delegated authority.

In 2011 the Group established an additional limit framework for certain European countries, in particular, Greece, Ireland, Italy, Portugal and Spain, with a focus to further avoid undue concentrations.

The Group charges its group divisions with the responsibility of managing their country risk within the approved limits. The regional units within Credit Risk Management monitor the Group's country risk based on information provided by Risk Operations and the Group's finance function. The Cross Risk Review Committee also reviews data on transfer risk.

Important elements of the country risk management at Postbank are country risk ratings and country risk limits. Ratings are reviewed and adjusted if required by means of a rating tool on a monthly basis. Country risk limits and sovereign risk limits for all relevant countries are approved by the Management Board annually. Loans are charged to the limits with their gross nominal amounts and allocated to individual countries based on the country of domicile of the borrower.

### Distribution Risk Management

The Group frequently underwrites 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 the Group may not be successful in the distribution of the facilities. In this case, the Group would have to hold more of the underlying risk than intended for longer periods of time than originally intended.

For risk management purposes the Group treats the full amount of all such commitments as credit exposure requiring credit approval. This approval also includes the Group's intended final hold. Amounts which the Group intends to sell are classified as trading assets and are subject to fair value accounting. The price volatility is monitored in the Group's market risk process. The Group protects the value of these assets against adverse market movements via adequate credit documentation for these transactions and market risk hedges (most commonly using related indices), which are also captured in the Group's market risk process.

### Settlement Risk Management

The Group's trading activities may give rise to risk at the time of settlement of those trades. Settlement risk is the risk of loss due to the failure of a counterparty to honor its obligations to deliver cash, securities or other assets as contractually agreed.

For many types of transactions, the Group mitigates settlement risk by closing the transaction through a clearing agent, which effectively acts as a stakeholder for both parties, only settling the trade once both parties have fulfilled their sides of the contractual obligation.

Where no such settlement system exists, the simultaneous commencement of the payment and the delivery parts of the transaction is common practice between trading partners (free settlement). In these cases, the Group may seek to mitigate the settlement risk through the execution of bilateral payment netting agreements. The Group is also participant in industry initiatives to reduce settlement risks. Acceptance of settlement risk on free settlement trades requires approval from the Group's credit risk personnel, either in the form of pre-approved settlement risk limits, or through transaction-specific approvals. The Group does not aggregate settlement risk limits with other credit exposures for credit approval purposes, but it takes the aggregate exposure into account when it considers whether a given settlement risk would be acceptable.

### Credit Risk Tools – Economic Capital for Credit Risk

The Group calculates economic capital for the default risk, country risk and settlement risk as elements of credit risk. In line with the Group's economic capital framework, economic capital for credit risk is set at a level to absorb with a probability of 99.98% very severe aggregate unexpected losses within one year. Since December 31, 2010, the Group included Postbank in the calculation of economic capital usage, which has been calculated on a basis consistent with Deutsche Bank methodology.

The Group's 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 the Group's own alpha factor determined for the Group's use of the Basel 2 internal models method. This alpha factor has been set at the minimum level of 1.2

both as of December 31, 2011, and December 31, 2010. The Group allocates expected losses and economic capital derived from loss distributions down to transaction level to enable management on transaction, customer and business level.

For internal purposes, Postbank employs a similar approach and calculates a credit value-at-risk ("CVaR") at 99.93 % confidence over a one year time horizon for all of its exposures subject to credit risk.

## 5.6 Credit Exposure

Counterparty credit exposure arises from the Group's traditional non-trading lending activities which include elements such as loans and contingent liabilities. Counterparty credit exposure also arises via the Group's direct trading activity with clients in certain instruments which include OTC derivatives like FX forwards and Forward Rate Agreements. A default risk also arises from the Group's positions in traded credit products such as bonds.

The Group defines its 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.

The Group's credit lending activities are governed by the Principles for Managing Country and Credit Risk. These principles define the general risk philosophy for credit and country risk and its methods to actively manage this risk. The principles define key organizational requirements, roles and responsibilities as well as process principles for credit and country risk management and are applicable to all lending activities undertaken by the Group. Key elements of the principles with relation to the underwriting process include:

- Independence of the credit risk management function from the business divisions.
- The internal rating of each borrower, as the rating is an essential part of the underwriting and credit process and builds the basis for correct risk appetite determination and adequate pricing of transactions. Ratings must always be kept up-to-date and documented.
- Credit approvals are based on credit authority which is assigned to individuals based on personal and professional qualification and experience. Authorities are reviewed annually and are valid until withdrawn.
- Credit approvals are documented by the signing of the credit report by the respective credit authority holders and retained for future reference.

The Group's various business divisions require individual and customized credit processes performed by independent credit risk units in order to assess and determine the underlying risks most appropriately. While this approach is designed to ensure high quality and tailor-made risk management, consistency of approach demands that all divisional credit risk units must follow the same fundamental credit risk management principles described above to ensure consistency of approach. Underwriting standards for the credit units are embodied within credit policies, guidelines and portfolio strategies for each appropriate loan category and are reviewed at least annually. The respective loan portfolios are also subject to frequent monitoring and reporting.

The following tables show details about several of the Group's main credit exposure categories, namely loans, irrevocable lending commitments, contingent liabilities, over-the-counter ("OTC") derivatives, tradable assets and repo- and repo-style transactions:

- "Loans" are net loans as reported on the Group's balance sheet at amortized cost but before deduction of the allowance for loan losses.
- "Irrevocable lending commitments" consist of the undrawn portion of irrevocable lending-related commitments.
- "Contingent liabilities" consist of financial and performance guarantees, standby letters of credit and indemnity agreements.
- "OTC derivatives" are the Group's credit exposures from over-the-counter derivative transactions that the Group has entered into, after netting and cash collateral received. On the Group's 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.
- "Tradable assets" consist of bonds, traded loans and other fixed-income products that are recorded either in trading assets or securities available for sale for accounting purposes. From a regulatory perspective this category principally covers trading book positions.
- "Repo and repo-style transactions" consist of reverse repurchase transactions, as well as securities or commodities borrowing transactions after application of netting and collateral received.

Although considered in the monitoring of credit exposures, the following are not included in the tables below: brokerage and securities related receivables, interest-earning deposits with banks, cash and due from banks, and accrued interest receivables. Excluded as well are true sale securitization positions and equity investments, which are dealt with specifically in Chapters 7 "Securitization" and 9.1 "Equity Investments in the Banking Book", respectively.

The following tables break down several of the Group's main credit exposure categories by geographical region. For these tables, the Group has allocated exposures to regions based on the country of domicile of its counterparties, irrespective of any affiliations the counterparties may have with corporate groups domiciled elsewhere.

Table 11 Credit Risk Exposure by Region

							Dec 31, 2011
in € m.	Loans <sup>1</sup>	Irrevocable lending commitments <sup>2</sup>	Contingent liabilities	OTC derivatives <sup>3</sup>	Tradable assets	Repo and repo-style transactions <sup>4</sup>	Total
Germany	199,442	24,448	15,408	5,148	25,259	24,207	293,912
Western Europe (excluding Germany)	115,782	32,399	19,460	35,932	63,157	53,520	320,250
Eastern Europe	9,387	1,357	1,682	135	4,628	548	17,737
North America	54,962	63,318	23,884	28,070	76,838	79,014	326,086
Central and South America	4,775	852	1,803	396	5,563	2,524	15,913
Asia/Pacific	30,291	4,791	10,425	9,011	35,512	41,417	131,447
Africa	1,502	598	991	888	730	424	5,133
Other <sup>5</sup>	535	232	-	44	65	-	876
<b>Total</b>	<b>416,676</b>	<b>127,995</b>	<b>73,653</b>	<b>79,624</b>	<b>211,752</b>	<b>201,654</b>	<b>1,111,354</b>

<sup>1</sup> Includes impaired loans amounting to € 9.4 billion as of December 31, 2011.

<sup>2</sup> Includes irrevocable lending commitments related to consumer credit exposure of € 9.2 billion as of December 31, 2011.

<sup>3</sup> Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

<sup>4</sup> Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

<sup>5</sup> Includes supranational organizations and other exposures that the Group has not allocated to a single region.

							Dec 31, 2010
in € m.	Loans <sup>1</sup>	Irrevocable lending commitments <sup>2</sup>	Contingent liabilities	OTC derivatives <sup>3</sup>	Tradable assets	Repo and repo-style transactions <sup>4</sup>	Total
Germany	207,129	24,273	15,758	3,018	23,823	18,691	292,692
Western Europe (excluding Germany)	110,930	30,239	18,019	22,213	73,097	60,295	314,793
Eastern Europe	8,103	1,844	1,319	836	6,708	1,101	19,911
North America	54,887	59,506	22,063	26,765	90,573	72,569	326,363
Central and South America	4,121	575	1,427	1,792	5,977	1,805	15,697
Asia/Pacific	23,562	6,651	8,532	7,247	39,353	29,381	114,726
Africa	961	419	911	421	1,083	2,237	6,032
Other <sup>5</sup>	1,332	374	26	13	95	-	1,840
<b>Total</b>	<b>411,025</b>	<b>123,881</b>	<b>68,055</b>	<b>62,305</b>	<b>240,709</b>	<b>186,079</b>	<b>1,092,054</b>

<sup>1</sup> Includes impaired loans amounting to € 6.3 billion as of December 31, 2010.

<sup>2</sup> Includes irrevocable lending commitments related to consumer credit exposure of € 4.5 billion as of December 31, 2010.

<sup>3</sup> Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

<sup>4</sup> Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

<sup>5</sup> Includes supranational organizations and other exposures that the Group has not allocated to a single region.

The Group's overall loan book was relatively unchanged as of December 31, 2011, rising to € 417 billion versus € 411 billion as of December 31, 2010.

The Group's largest concentrations of credit risk within loans from a regional perspective were in Western Europe with a significant share in households, and North America. The concentration in Western Europe was principally in the Group's home market Germany, which includes most of its mortgage lending business. Within the OTC derivatives business the Group's largest concentrations were also in Western Europe and North America, with a significant share in highly rated banks and insurance companies for which the Group considers the credit risk to be limited.

In addition Postbank monitors credit risk concentrations to specific European Countries as well as to the structured credit portfolio.

The Group's largest concentrations of credit risk within tradable assets from a regional perspective were in North America and Western Europe (excluding Germany), with a significant share in public sector and banks and insurance companies. Within the repo and repo-style transactions the Group's largest concentrations were

in North America and Western Europe (excluding Germany), with a significant share in highly rated banks and insurance companies.

The net decrease in tradable assets (€ 29 billion) was primarily due to reduced positions with banks and insurance companies within North America and Western Europe (excluding Germany) being partially offset by an increase in public sector.

The increase in OTC derivatives (€ 17 billion) was largely with banks and insurance companies within Western Europe (excluding Germany).

The increase in repo and repo-style transactions (€ 16 billion) was primarily in positions with banks and insurance companies within the Asia/Pacific region.

The following tables break down several of the main credit exposure categories according to the industry sectors of the Group's counterparties.

Table 12 Credit Risk Exposure by Industry

							Dec 31, 2011
in € m.	Loans <sup>1</sup>	Irrevocable lending commitments <sup>2</sup>	Contingent liabilities	OTC derivatives <sup>3</sup>	Tradable assets	Repo and repo-style transactions <sup>4</sup>	Total
Banks and insurance	35,308	22,553	17,668	50,657	56,589	193,621	376,396
Fund management activities	24,952	4,931	2,432	8,943	10,015	396	51,669
Manufacturing	22,754	31,297	19,608	3,279	5,216	2	82,156
Wholesale and retail trade	15,045	8,412	5,527	610	1,868	36	31,498
Households	174,188	10,613	2,706	1,082	2,290	26	190,905
Commercial real estate activities	46,143	2,877	2,348	2,187	3,126	110	56,791
Public sector	16,412	1,479	104	8,625	107,465	740	134,825
Other	81,874 <sup>5</sup>	45,833	23,260	4,241	25,183	6,723	187,114
<b>Total</b>	<b>416,676</b>	<b>127,995</b>	<b>73,653</b>	<b>79,624</b>	<b>211,752</b>	<b>201,654</b>	<b>1,111,354</b>

<sup>1</sup> Includes impaired loans amounting to € 9.4 billion as of December 31, 2011.

<sup>2</sup> Includes irrevocable lending commitments related to consumer credit exposure of € 9.2 billion as of December 31, 2011.

<sup>3</sup> Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

<sup>4</sup> Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

<sup>5</sup> Loan exposures for "Other" include lease financing.

							Dec 31, 2010
in € m.	Loans <sup>1</sup>	Irrevocable lending commitments <sup>2</sup>	Contingent liabilities	OTC derivatives <sup>3</sup>	Tradable assets <sup>4</sup>	Repo and repo-style transactions <sup>5</sup>	Total
Banks and insurance	38,798	22,241	17,801	32,315	73,701	170,098	354,954
Fund management activities	27,964	6,435	2,392	9,318	13,531	118	59,758
Manufacturing	20,748	31,560	18,793	3,270	11,261	3,982	89,614
Wholesale and retail trade	13,637	7,369	5,022	517	2,887	347	29,779
Households	167,352	9,573	2,537	842	3,066	63	183,433
Commercial real estate activities	44,119	3,210	2,196	1,577	5,420	421	56,943
Public sector	24,113	858	57	6,510	100,910	609	133,057
Other	74,294 <sup>6</sup>	42,635	19,257	7,956	29,933	10,441	184,516
<b>Total</b>	<b>411,025</b>	<b>123,881</b>	<b>68,055</b>	<b>62,305</b>	<b>240,709</b>	<b>186,079</b>	<b>1,092,054</b>

<sup>1</sup> Includes impaired loans amounting to € 6.3 billion as of December 31, 2010.

<sup>2</sup> Includes irrevocable lending commitments related to consumer credit exposure of € 4.5 billion as of December 31, 2010.

<sup>3</sup> Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

<sup>4</sup> Includes the reassignment of € 15.7 billion Tradable asset US agency related exposure from Banks and Insurance to Public Sector.

<sup>5</sup> Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

<sup>6</sup> Loan exposures for "Other" include lease financing.



The tables below provide the residual contract maturity profile of the main credit exposure categories.

Table 13 Credit Risk Exposure by Maturity

							Dec 31, 2011
in € m.	Loans <sup>1</sup>	Irrevocable lending commitments	Contingent liabilities	OTC derivatives <sup>2</sup>	Tradable assets	Repo and repo-style transactions <sup>3</sup>	Total
< 1 year	135,407	34,414	39,203	14,094	53,609	197,434	474,161
1 year – 5 years	102,883	76,998	20,918	21,486	60,584	4,136	287,005
> 5 years	178,386	16,583	13,532	44,044	97,559	84	350,188
<b>Total credit risk exposure</b>	<b>416,676</b>	<b>127,995</b>	<b>73,653</b>	<b>79,624</b>	<b>211,752</b>	<b>201,654</b>	<b>1,111,354</b>

<sup>1</sup> Includes impaired loans amounting to € 9.4 billion as of December 31, 2011.

<sup>2</sup> Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

<sup>3</sup> Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

							Dec 31, 2010
in € m.	Loans <sup>1</sup>	Irrevocable lending commitments	Contingent liabilities	OTC derivatives <sup>2</sup>	Tradable assets	Repo and repo-style transactions <sup>3</sup>	Total
< 1 year	130,021	38,896	37,067	14,610	53,669	181,295	455,558
1 year – 5 years	102,105	70,461	18,425	18,636	74,098	4,628	288,353
> 5 years	178,899	14,524	12,563	29,059	112,942	156	348,143
<b>Total credit risk exposure</b>	<b>411,025</b>	<b>123,881</b>	<b>68,055</b>	<b>62,305</b>	<b>240,709</b>	<b>186,079</b>	<b>1,092,054</b>

<sup>1</sup> Includes impaired loans amounting to € 6.3 billion as of December 31, 2010.

<sup>2</sup> Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

<sup>3</sup> Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

The average credit risk exposure held over the four quarters was € 1,112 billion for 2011 and € 981 billion for 2010 as shown in the tables below.

Table 14 Average Credit Risk Exposure

							2011
in € m.	Loans <sup>1</sup>	Irrevocable lending commitments	Contingent liabilities	OTC derivatives <sup>2</sup>	Tradable assets	Repo and repo-style transactions <sup>3</sup>	Total
<b>Total average credit risk exposure</b>	<b>407,212</b>	<b>125,310</b>	<b>68,988</b>	<b>69,490</b>	<b>234,690</b>	<b>206,014</b>	<b>1,111,704</b>
<b>Total credit risk exposure at year-end</b>	<b>416,676</b>	<b>127,995</b>	<b>73,653</b>	<b>79,624</b>	<b>211,752</b>	<b>201,654</b>	<b>1,111,354</b>

<sup>1</sup> Includes impaired loans amounting to € 9.4 billion as of December 31, 2011.

<sup>2</sup> Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

<sup>3</sup> Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

							2010
in € m.	Loans <sup>1</sup>	Irrevocable lending commitments	Contingent liabilities	OTC derivatives <sup>2</sup>	Tradable assets	Repo and repo-style transactions <sup>3</sup>	Total
<b>Total average credit risk exposure</b>	<b>314,120</b>	<b>113,825</b>	<b>64,202</b>	<b>67,876</b>	<b>226,943</b>	<b>193,840</b>	<b>980,806</b>
<b>Total credit risk exposure at year-end</b>	<b>411,025</b>	<b>123,881</b>	<b>68,055</b>	<b>62,305</b>	<b>240,709</b>	<b>186,079</b>	<b>1,092,054</b>

<sup>1</sup> Includes impaired loans amounting to € 6.3 billion as of December 31, 2010.

<sup>2</sup> Includes the effect of netting agreements and cash collateral received where applicable. Excludes derivatives qualifying for hedge accounting.

<sup>3</sup> Before reflection of collateral and limited to securities purchased under resale agreements and securities borrowed.

The average credit risk exposure increase of 2011 was predominantly due to the first time inclusion of Post-bank exposure in 2010 for the month of December.

## 5.7 Counterparty Credit Risk from Derivatives

### Credit Exposure from Derivatives

Exchange-traded derivative transactions (e.g., futures and options) are regularly settled through a central counterparty (e.g., LCH, Clearnet Ltd. or Eurex Clearing AG), 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, the Group also uses central counterparty clearing services for OTC derivative transactions (“OTC clearing”); the Group thereby benefits from the credit risk mitigation achieved through the central counterparty’s settlement system.

As the replacement values of derivatives portfolios fluctuate with movements in market rates and with changes in the transactions in the portfolios, the Group also estimates the potential future replacement costs of the portfolios over their lifetimes or, in case of collateralized portfolios, over appropriate unwind periods. The Group measures the potential future exposure against separate limits. The Group supplements the potential future exposure analysis with stress tests to estimate the immediate impact of extreme market events on its exposures (such as event risk in its Emerging Markets portfolio).

The potential future exposure measure which the Group uses is generally given by a time profile of simulated positive market values of each counterparty’s derivatives portfolio, for which netting and collateralization are considered. For limit monitoring the Group employs the 95th quantile of the resulting distribution of market values, internally referred to as potential future exposure (“PFE”). The average exposure profiles generated by the same calculation process are used to derive the so-called average expected exposure (“AEE”) measure, which the Group uses to reflect expected future replacement costs within its credit risk economic capital, and the expected positive exposure (“EPE”) measure driving its regulatory capital requirements. While AEE and EPE are generally calculated with respect to a time horizon of one year, the PFE is measured over the entire lifetime of a transaction or netting set for uncollateralized portfolios and over an appropriate unwind period for collateralized portfolios, respectively. The Group also employs the aforementioned calculation process to derive stressed exposure results for input into its credit portfolio stress testing.

The PFE profile of each counterpart is compared daily to a PFE limit profile set by the responsible credit officer. PFE limits are integral part of the overall counterparty credit exposure management in line with other limit types. Breaches of PFE limits at any one profile time point are highlighted for action within the Group’s credit risk management process. The EPE is directly used in the customer level calculation of the IRBA regulatory capital under the so-called internal model method (“IMM”), whereas AEE feeds as a loan equivalent into the Group’s credit portfolio model where it is combined with all other exposure to a counterpart within the respective simulation and allocation process (see Chapter 5.5 “Monitoring Credit Risk”).

The following table shows the positive market values or replacement costs of the Group's OTC and exchange-traded derivative transactions entered into for trading and non-trading purposes as of December 31, 2011, and December 31, 2010, following IFRS consolidation and valuation principles. The positive market values are presented gross, that is, before considering netting and collateral. The benefit resulting from the application of netting and collateral is displayed separately.

Table 15 Positive Market Values of Derivatives

in € m. <sup>1</sup>	Dec 31, 2011				Dec 31, 2010			
	Positive market values before netting and collateral agreements	Netting agreements	Eligible collateral <sup>2</sup>	Positive market values after netting and collateral agreements	Positive market values before netting and collateral agreements	Netting agreements	Eligible collateral <sup>2</sup>	Positive market values after netting and collateral agreements
Interest rate contracts	587,718	502,390	51,645	33,683	410,970	350,087	37,376	23,507
Foreign exchange contracts	112,924	86,403	9,477	17,044	110,371	87,714	8,736	13,921
Equity contracts	35,412	23,368	3,344	8,700	34,017	25,367	3,118	5,532
Credit derivative contracts	101,113	84,747	6,002	10,364	81,093	67,163	5,142	8,788
Commodity-related activities	16,648	12,602	809	3,236	14,108	11,056	653	2,399
Other contracts	5,768	4,743	515	510	7,221	6,165	699	356
<b>Total positive market values of derivatives</b>	<b>859,583</b>	<b>714,253</b>	<b>71,793</b>	<b>73,537</b>	<b>657,780</b>	<b>547,553</b>	<b>55,724</b>	<b>54,503</b>

<sup>1</sup> Excludes for December 31, 2011, and December 31, 2010, respectively, € 7.6 billion (€ 8.5 billion) positive market values before netting and collateral or € 612 million (€ 344 million) positive market values after netting and collateral with regard to derivatives classified as other assets.

<sup>2</sup> Includes € 61.1 billion cash collateral and € 10.7 billion non-cash collateral as of December 31, 2011, and € 46.3 billion cash collateral and € 9.4 billion non-cash collateral as of December 31, 2010.

The counterparty credit risk position resulting from derivative transactions in the form of the regulatory exposure value (exposure at default) amounted to € 131 billion as of December 31, 2011, and to € 155 billion as of December 31, 2010. The related RWA for these derivative counterparty credit risk position amounted to € 49 billion as of December 31, 2011, and to € 55 billion as of December 31, 2010. The calculation builds on the regulatory principles for consolidation and netting and is therefore not directly comparable to the IFRS-related information as presented in the tables above. Moreover, the Group uses the IMM to derive a regulatory exposure value for the vast majority of its derivative exposure while applying an own calibrated alpha factor in its calculation, floored at the minimum level of 1.2. More details on the IMM are presented in Chapter 6.2 "Advanced Internal Ratings Based Approach". As noted before, Postbank applies the current exposure method to its derivatives exposures resulting in an EAD of € 2.4 billion and RWA of € 1.2 billion as of December 31, 2011, and as of December 31, 2010 resulting in an EAD of € 4.4 billion and RWA of € 1.5 billion, both included above. Hence, Postbank's derivative counterparty credit risk is immaterial to the Group.

The tables below list the nominal volumes of the Group's credit derivative exposure as of December 31, 2011, and December 31, 2010, based on the IFRS consolidation principles. The figures are provided on a gross level, meaning no netting has been considered. The tables split the exposure into the part held in the regulatory banking book, which is shown under the heading "used for own credit portfolio" and the part held in the regulatory trading book, referred to as "acting as intermediary".

Table 16 Notional Amount of Credit Derivatives

in € m.	Dec 31, 2011				
	Used for own credit portfolio		Acting as intermediary		Total <sup>1</sup>
	Protection bought	Protection sold	Protection bought	Protection sold	
Credit default swaps – single name	47,770	844	1,017,110	999,112	2,064,836
Credit default swaps – multi name <sup>1</sup>	604	55	782,383	824,100	1,607,142
Total return swaps	454	927	6,416	5,066	12,864
<b>Total notional amount of credit derivatives</b>	<b>48,828</b>	<b>1,827</b>	<b>1,805,909</b>	<b>1,828,278</b>	<b>3,684,843</b>

<sup>1</sup> Includes credit default swaps on indices and nth-to-default credit default swaps.

in € m.	Dec 31, 2010				
	Used for own credit portfolio		Acting as intermediary		Total <sup>1</sup>
	Protection bought	Protection sold	Protection bought	Protection sold	
Credit default swaps – single name	37,707	1,766	917,980	901,615	1,859,068
Credit default swaps – multi name <sup>1</sup>	695	39	770,554	750,835	1,522,123
Total return swaps	733	922	4,321	4,652	10,628
<b>Total notional amount of credit derivatives</b>	<b>39,135</b>	<b>2,728</b>	<b>1,692,855</b>	<b>1,657,102</b>	<b>3,391,819</b>

<sup>1</sup> Includes credit default swaps on indices and nth-to-default credit default swaps.

## 5.8 Asset Quality

Information presented in this chapter is based upon IFRS principles of consolidation and uses financial statement values.

### Impairment of Loans and Allowance for Loan Losses

Credit Risk Management regularly assesses 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”),
- 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.

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 an oversight committee comprised of Group Finance and Risk senior management.

Within consolidations the Group acquired certain loans for which an impairment had been established beforehand by the consolidated entities. These loans were taken onto the Group’s balance sheet at their fair values as determined by their expected cash flows which reflected the credit quality of these loans at the time of acquisition. As long as the Group’s cash flow expectations regarding these loans have not deteriorated since acquisition, they are not considered impaired loans.

The Group first assesses whether objective evidence of impairment exists individually for loans that are individually significant. It then assesses collectively for loans that are not individually significant and loans which are significant but for which there is no objective evidence of impairment under the individual assessment.

To allow management to determine whether a loss event has occurred on an individual basis, all significant counterparty relationships are reviewed periodically. This evaluation considers current information and events related to the counterparty, such as the counterparty experiencing significant financial difficulty or a breach of contract, for example, default or delinquency in interest or principal payments.

If there is evidence of impairment leading to an impairment loss for an individual counterparty relationship, then the amount of the loss is determined as the difference between the carrying amount of the loan(s), including accrued interest, and the present value of expected future cash flows discounted at the loan's original effective interest rate or the effective interest rate established upon reclassification to loans, including cash flows that may result from foreclosure less costs for obtaining and selling the collateral. The carrying amount of the loans is reduced by the use of an allowance account and the amount of the loss is recognized in the consolidated statement of income as a component of the provision for credit losses.

The collective assessment of impairment is principally to establish an allowance amount relating to loans that are either individually significant but for which there is no objective evidence of impairment, or are not individually significant but for which there is, on a portfolio basis, a loss amount that is probable of having occurred and is reasonably estimable. The loss amount has three components. The first component is an amount for transfer and currency convertibility risks for loan exposures in countries where there are serious doubts about the ability of counterparties to comply with the repayment terms due to the economic or political situation prevailing in the respective country of domicile. This amount is calculated using ratings for country risk and transfer risk which are established and regularly reviewed for each country in which the Group does business. The second component is an allowance amount representing the incurred losses on the portfolio of smaller-balance homogeneous loans, which are loans to individuals and small business customers of the private and retail business. The loans are grouped according to similar credit risk characteristics and the allowance for each group is determined using statistical models based on historical experience. The third component represents an estimate of incurred losses inherent in the group of loans that have not yet been individually identified or measured as part of the smaller-balance homogeneous loans. Loans that were found not to be impaired when evaluated on an individual basis are included in the scope of this component of the allowance.

Once a loan is identified as impaired, although the accrual of interest in accordance with the contractual terms of the loan is discontinued, the accretion of the net present value of the written down amount of the loan due to the passage of time is recognized as interest income based on the original effective interest rate of the loan.

At each balance sheet date, all impaired loans are reviewed for changes to the present value of expected future cash flows discounted at the loan's original effective interest rate. Any change to the previously recognized impairment loss is recognized as a change to the allowance account and recorded in the consolidated statement of income as a component of the provision for credit losses.

When it is considered that there is no realistic prospect of recovery and all collateral has been realized or transferred to the Group, the loan and any associated allowance is charged off (the loan and the related allowance are removed from the balance sheet). Individually significant loans where specific loan loss provisions are in place are evaluated at least quarterly on a case-by-case basis. For this category of loans, the number of days past due is an indicator for a charge-off but is not a determining factor. A charge-off will only

take place after considering all relevant information, such as the occurrence of a significant change in the borrower's financial position such that the borrower can no longer pay the obligation, or the proceeds from the collateral are insufficient to completely satisfy the current carrying amount of the loan.

For collectively assessed loans, which are primarily mortgages and consumer finance loans, the timing of a charge-off depends on whether there is any underlying collateral and the Group's estimate of the amount collectible. For mortgage loans, the portion of the loan which is uncollateralized is charged off when the mortgage becomes 840 days past due, at the latest. For consumer finance loans, any portion of the balance which the bank does not expect to collect is written off at 180 days past due for credit card receivables, and 270 days past due for other consumer finance loans.

Subsequent recoveries, if any, result in a reduction in the allowance account and are recorded in the consolidated statement of income as a component of the provision for credit losses.

The process to determine the provision for off-balance sheet positions is similar to the methodology used for loans. Any loss amounts are recognized as an allowance in the consolidated balance sheet within provisions and charged to the consolidated statement of income as a component of the provision for credit losses.

If in a subsequent period the amount of a previously recognized impairment loss decreases and the decrease is due to an event occurring after the impairment was recognized, the impairment loss is reversed by reducing the allowance account accordingly. Such reversal is recognized in profit or loss.

Postbank's methodology for establishing loan loss allowances is similar to that of the Group. Exceptions include the fact that Postbank executes direct charge-offs without first establishing a loan loss allowance and the fact that the loan loss allowances in its retail mortgage portfolio are assessed individually for loans being 180 days or more past due. In reflecting Postbank in the Group's consolidated results, the effects of the aforementioned differences have been aligned to the Group's policies for reporting purposes.

Loan loss allowances established for acquired loans prior to their consolidation, have not been consolidated into the Group's stock of loan loss allowances. Instead, the Group has considered these loan loss allowances in determining the fair value representing the cost basis of the newly consolidated loans. The Group reflects subsequent improvements in the credit quality of these loans as an appreciation in their carrying value with a corresponding gain recognized in net interest income. Loan loss allowances the Group establishes for acquired loans after their consolidation, however, are included in its provision for credit losses and loan loss allowances.

### Past Due Loans

The Group considers originated loans to be past due once contractually agreed payments on principal and/or interest remain unpaid by the borrower. In addition, the Group considers loans acquired through consolidation to be past due once payments on principal and/or interest, which were expected with a certain payment date at time of the initial consolidation of the loans, remain unpaid by the borrower. The Group categorizes nonimpaired loans past due according to these definitions into days past due buckets for the IFRS disclosure.

## Quantitative Information on Asset Quality

The following tables present the Group's impaired loans, the individually and collectively assessed loan loss allowances held in respect of these impaired loans and other loans past due but not impaired, broken down by geographic region based on the country of domicile of the counterparties, as well as by industry sectors of the counterparties.

Table 17 Loans Impaired or Past Due by Region

in € m.	Dec 31, 2011				Dec 31, 2010			
	Total impaired loans	Individually assessed loan loss allowance	Collectively assessed loan loss allowance	Other loans past due <sup>1</sup>	Total impaired loans	Individually assessed loan loss allowance	Collectively assessed loan loss allowance	Other loans past due <sup>1</sup>
Germany	3,224	832	683	3,749	2,006	559	292	4,102
Western Europe (excluding Germany)	4,585	841	751	2,532	2,594	640	634	1,838
Eastern Europe	241	36	172	143	267	6	172	112
North America	1,074	193	1	165	1,150	339	0	238
Central and South America	40	28	0	14	43	27	-	14
Asia/Pacific	270	81	1	73	182	68	1	42
Africa	0	0	0	2	23	4	-	84
Other	0	-	4	-	-	-	0	-
<b>Total</b>	<b>9,434</b>	<b>2,011</b>	<b>1,612</b>	<b>6,678</b>	<b>6,265</b>	<b>1,643</b>	<b>1,099</b>	<b>6,430</b>

<sup>1</sup> These are loans in which interest or principal payments were one day or more past due and which were not impaired.

Table 18 Loans Impaired or Past Due by Industry

in € m.	Dec 31, 2011				Dec 31, 2010			
	Total impaired loans	Individually assessed loan loss allowance	Collectively assessed loan loss allowance	Other loans past due <sup>1</sup>	Total impaired loans	Individually assessed loan loss allowance	Collectively assessed loan loss allowance	Other loans past due <sup>1</sup>
Banks and insurances	91	98	3	77	81	82	-	82
Fund management activities	917	322	-	9	841	298	-	11
Manufacturing	778	364	69	233	742	332	58	149
Wholesale and retail trade	462	164	75	439	312	147	66	198
Households	3,010	155	1,320	4,425	1,973	105	857	4,487
Commercial real estate activities	2,806	424	18	814	969	259	17	867
Public sector	0	-	0	16	-	-	0	7
Other <sup>2</sup>	1,370	484	127	665	1,347	420	101	629
<b>Total</b>	<b>9,434</b>	<b>2,011</b>	<b>1,612</b>	<b>6,678</b>	<b>6,265</b>	<b>1,643</b>	<b>1,099</b>	<b>6,430</b>

<sup>1</sup> These are loans in which interest or principal payments were one day or more past due and which were not impaired.

<sup>2</sup> Impaired loans and individually assessed allowances in category "Other" were widely spread across various industries.

As of December 31, 2011, the Group's impaired loans totaled € 9.4 billion and were comprised of individually assessed impaired loans amounting to € 6.0 billion and collectively assessed impaired loans amounting to € 3.4 billion. 49% of the Group's impaired loans were with counterparties domiciled in Western Europe (excluding Germany), followed by 34% with clients domiciled in Germany, while industry concentrations were with households (32%) and commercial real estate (30%). Total impaired loans increased in 2011 by € 3.2 billion or 51% mainly due to € 1.8 billion new impaired loans from Postbank and two commercial real estate cases in Western Europe (excluding Germany) for which the Group had to record only small impairment losses.

The Group's allowance for loan losses for impaired loans as of December 31, 2011, was € 3.6 billion, and included an individually assessed loan loss allowance for impaired loans of € 2.0 billion and a collectively assessed loan loss allowance for impaired loans of € 1.6 billion. 44 % of the Group's allowance for loan losses on impaired loans was with counterparties domiciled in Western Europe (excluding Germany), followed by 42 % with clients domiciled in Germany, while industry concentrations were with households (41 %) and other (17 %). The increase in the Group's allowance for loan losses for impaired loans in 2011 was principally due to increased new provisions following the first full year consolidation of Postbank and lower net charge-offs compared to the prior year.

As of December 31, 2011, the Group's loans past due but not impaired totaled € 6.7 billion, of which 61 % were less than 30 days past due. Of the loans past due but not impaired 59 % were with counterparties domiciled in Germany, while industry concentration was with households (66 %).

In addition to the allowances for loan losses for impaired loans reported in the Tables 17 "Loans Impaired or Past Due by Region" and 18 "Loans Impaired or Past Due by Industry", as of December 31, 2011, the Group held € 538 million allowances for loan losses on collectively assessed loans considered performing, which amounted to € 554 million as of December 31, 2010. These amounts have been recorded in order to reflect incurred losses that have not yet been individually identified or provided for as part of the assessment of smaller-balance homogeneous loans.

As a result, as of December 31, 2011, the Group held € 4.2 billion allowance for loan losses, which was 44 % of the Group's loan exposure classified as impaired, versus € 3.3 billion and 53 % as of December 31, 2010.

The decrease in the coverage ratio is a reflection of technical IFRS accounting effects on loans consolidated in relation to Postbank (see below) as well as newly impaired commercial real estate exposure with relatively low allowance levels, but a high level of collateral.

At consolidation, all loans classified as impaired by Postbank were recorded as performing loans by the Group and at fair value. Subsequent increases in provisions at Postbank result in an impairment of the full loan from a Group consolidated perspective, but with an allowance being built for the incremental provision only.

The following table presents the aggregated value of collateral the Group held against impaired loans, with fair values capped at transactional outstandings.

**Table 19 Fair Value of Collateral Held**

in € m.	Dec 31, 2011	Dec 31, 2010
Financial and other collateral	3,714	1,502
Guarantees received	349	77
<b>Total collateral held for impaired loans</b>	<b>4,063</b>	<b>1,579</b>

The increase in the Group's total collateral held for impaired loans in 2011 of € 2.5 billion was primarily driven by Postbank and one commercial real estate case, leading to a higher coverage of impaired loans by collateral and allowance for loan losses of 87 % as of December 31, 2011 compared to 78 % as of December 31, 2010.



The following table presents the Group's impaired loans, the corresponding provision for loan losses before recoveries, and recoveries, according to the industry sectors of the counterparties.

**Table 20 Loans Impaired, Provisions and Recoveries by Industry**

in € m.	Dec 31, 2011	12 month ending Dec 31, 2011		Dec 31, 2010	12 month ending Dec 31, 2010	
	Total impaired loans	Provision for loan losses before recoveries	Recoveries	Total impaired loans	Provision for loan losses before recoveries	Recoveries
Banks and insurances	91	52	1	81	71	4
Fund management activities	917	32	0	841	21	–
Manufacturing	778	156	21	742	111	19
Wholesale and retail trade	462	74	9	312	79	9
Households	3,010	982	109	1,973	678	77
Commercial real estate activities	2,806	356	5	969	177	4
Public sector	0	2	0	–	(8)	0
Other <sup>1</sup>	1,370	347	22	1,347	256	30
<b>Total</b>	<b>9,434</b>	<b>2,000</b>	<b>168</b>	<b>6,265</b>	<b>1,385</b>	<b>143</b>

<sup>1</sup> Impaired loans in category "Other" were widely spread across various industries.

The following table breaks down the nonimpaired past due loan exposure carried at amortized cost according to its past due status, including nonimpaired loans past due more than 90 days but where there is no concern over the creditworthiness of the counterparty.

**Table 21 Loans Past Due but not Impaired**

in € m.	Dec 31, 2011	Dec 31, 2010
Loans less than 30 days past due	4,394	4,092
Loans 30 or more but less than 60 days past due	958	973
Loans 60 or more but less than 90 days past due	420	384
Loans 90 days or more past due	907	981
<b>Total loans past due but not impaired</b>	<b>6,678</b>	<b>6,430</b>

### Allowance for Off-balance Sheet Positions

The Group's allowance for off-balance sheet positions totaled € 225 million as of December 31, 2011, and included € 127 million of individually assessed and € 98 million of collectively assessed allowances.

## Allowance for Credit Losses

The following tables provide a breakdown of the movements in the Group's allowance for credit losses.

Table 22 Development of Allowance for Credit Losses

in € m.	2011				
	Allowance for loan losses		Allowance for off-balance sheet positions		Total
	Individually assessed	Collectively assessed	Individually assessed	Collectively assessed	
<b>Balance, beginning of year</b>	<b>1,643</b>	<b>1,653</b>	<b>108</b>	<b>110</b>	<b>3,513</b>
<b>Provision for credit losses</b>	<b>907</b>	<b>925</b>	<b>19</b>	<b>(12)</b>	<b>1,839</b>
Increases/newly approved allowances	1,078	925	61	-	2,064
Reductions/releases of allowances	(171)	-	(41)	(12)	(224)
<b>Net charge-offs</b>	<b>(512)</b>	<b>(385)</b>	<b>-</b>	<b>-</b>	<b>(897)</b>
Charge-offs	(553)	(512)	-	-	(1,065)
Recoveries	41	127	-	-	168
<b>Allowance related to acquisitions/divestitures</b>	<b>-</b>	<b>(0)</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>
<b>Exchange rate-related differences/other</b>	<b>(26)</b>	<b>(43)</b>	<b>(0)</b>	<b>(0)</b>	<b>(69)</b>
<b>Balance, end of year</b>	<b>2,011</b>	<b>2,150</b>	<b>127</b>	<b>98</b>	<b>4,386</b>

in € m.	2010				
	Allowance for loan losses		Allowance for off-balance sheet positions		Total
	Individually assessed	Collectively assessed	Individually assessed	Collectively assessed	
<b>Balance, beginning of year</b>	<b>2,029</b>	<b>1,313</b>	<b>83</b>	<b>124</b>	<b>3,550</b>
<b>Provision for credit losses</b>	<b>562</b>	<b>751</b>	<b>(18)</b>	<b>(21)</b>	<b>1,273</b>
Increases/newly approved allowances	731	751	20	-	1,502
Reductions/releases of allowances	(169)	(1)	(37)	(21)	(228)
<b>Net charge-offs</b>	<b>(896)</b>	<b>(404)</b>	<b>-</b>	<b>-</b>	<b>(1,300)</b>
Charge-offs	(934)	(509)	-	-	(1,443)
Recoveries	38	104	-	-	143
<b>Allowance related to acquisitions/divestitures</b>	<b>-</b>	<b>-</b>	<b>42</b>	<b>-</b>	<b>42</b>
<b>Exchange rate-related differences/other</b>	<b>(53)</b>	<b>(6)</b>	<b>1</b>	<b>7</b>	<b>(52)</b>
<b>Balance, end of year</b>	<b>1,643</b>	<b>1,653</b>	<b>108</b>	<b>110</b>	<b>3,513</b>

## Treatment of Default Situations under Derivatives

Unlike standard loan assets, the Group generally has more options to manage the credit risk in its OTC derivatives when movement in the current replacement costs of the transactions and the behavior of the Group's counterparty indicate that there is the risk that upcoming payment obligations under the transactions might not be honored. In these situations, the Group is frequently able under prevailing contracts to obtain additional collateral or terminate the transactions or the related master agreement at short notice.

Wrong way risk occurs when exposure to a counterparty is adversely correlated with the credit quality of that counterparty. It must be carefully considered together with the correlation between the obligor and risk mitigants and is actively monitored and reviewed on a regular basis. In compliance with Section 224 (8) and (9) SolvV the Group, excluding Postbank, has established a monthly process to monitor specific wrong way risk, whereby transactions subject to wrong way risk are automatically selected and presented for comment to the responsible credit officer. In addition, the Group, excluding Postbank, utilizes its established process for calibrating its own alpha factor (as defined in Section 223 (7) SolvV) to estimate the overall wrong-way risk in the Group's derivatives and securities financing transaction portfolio. Postbank derivative counterparty risk is immaterial to the Group and collateral held is typically in the form of cash.

### Derivatives – Credit Valuation Adjustment

The Group establishes a counterparty credit valuation adjustment for OTC derivative transactions to cover expected credit losses. The adjustment amount is determined at each reporting date by assessing the potential credit exposure to all counterparties taking into account any collateral held, the effect of any master netting agreements, expected loss given default and the credit risk for each counterparty based on market evidence, which may include default levels implied from historic information, fundamental analysis of financial information, and CDS spreads.

The credit valuation adjustments are significant for certain monoline counterparties. For monolines with actively traded CDS, the CVA is calculated using a full CDS-based valuation model. For monolines without actively traded CDS a model based approach is used with various input factors, including relevant market driven default probabilities, the likelihood of an event (either a restructuring or an insolvency), an assessment of any potential settlement in the event of a restructuring, and recovery rates in the event of either restructuring or insolvency. The monoline CVA methodology is reviewed on a quarterly basis by management; since the second quarter of 2011 market based spreads have been used more extensively in the CVA assessment.

The Group recorded € 1.1 billion in credit valuation adjustments against its aggregate monoline exposures as of December 31, 2011, compared to € 1.2 billion as of December 31, 2010.

The master agreements executed with the Group's clients usually provide for a broad set of standard or bespoke termination rights, which allow the Group to respond swiftly to a counterparty's default or to other circumstances which indicate a high probability of failure. When the Group's decision to terminate derivative transactions or the related master agreement results in a residual net obligation owed by the counterparty, the Group restructures the obligation into a non-derivative claim and manages it through its regular work-out process. As a consequence, for accounting purposes the Group typically does not show any nonperforming derivatives.

## 6. Counterparty Credit Risk: Regulatory Assessment

### 6.1 General Considerations

The Group, excluding Postbank, applies the advanced IRBA for the majority of its advanced IRBA eligible credit portfolios to calculate its regulatory capital requirements according to the SolvV, based on respective approvals received from BaFin.

The BaFin approvals obtained as a result of the advanced IRBA audit processes for the Group's counterparty credit exposures excluding Postbank allow the usage of 54 internally developed rating systems for regulatory capital calculation purposes out of which 37 rating systems were authorized in December 2007 and a further 17 less material ones followed until year end 2011. Overall they cover all of the Group's material exposures, excluding Postbank, in the advanced IRBA eligible exposure classes "central governments", "institutions", "corporates", and "retail".

The Group, excluding Postbank, assigns a few remaining advanced IRBA eligible portfolios temporarily to the standardized approach. With regard to these, an implementation plan and approval schedule have been set up and agreed with the competent authorities, the BaFin and the Bundesbank.

As described in Chapter 3.2 "Regulatory Capital Requirements", Postbank's retail portfolio is also assigned to the advanced IRBA based on respective BaFin approvals Postbank received and the fact that the Group has an advanced IRBA status. Details of the advanced IRBA and the advanced IRBA exposures are provided in Chapters 6.2 "Advanced Internal Ratings Based Approach" and 6.3 "Advanced IRBA Exposure".

Moreover, the Group applies the foundation IRBA for a significant portion of Postbank's IRBA eligible credit portfolios, where Postbank received respective BaFin approvals in recent years. The foundation IRBA and the foundation IRBA exposures are discussed in Chapters 6.4 "Foundation Internal Ratings Based Approach" and 6.5 "Foundation IRBA Exposure".

The approvals Postbank obtained from the BaFin as a result of its IRBA audit processes for the counterparty credit exposures allow the usage of 16 internally developed rating systems for regulatory capital calculation purposes under the IRBA and out of which 8 rating systems were authorized in December 2006 and a further 8 followed by year end 2011. Overall they cover Postbank's material exposures in the advanced IRBA eligible exposure class "retail" as well as Postbank's material exposures in the foundation IRBA eligible exposure classes "central governments", "institutions" and "corporates".

Postbank is currently in the process of preparing for the advanced IRBA audit process for the exposure classes "institutions" and "corporates" to extend its foundation IRBA approvals to advanced IRBA approvals.

Exposures which the Group does not treat under the advanced or the foundation IRBA are discussed in the Chapters 6.6 "Other IRBA Exposure" or 6.7 "Standardized Approach" respectively.

The advanced IRBA coverage ratio of the Group, excluding Postbank, is more than 90 % as of December 31, 2011, using an exposure measure according to Section 67 SolvV. This ratio excludes the exposures permanently assigned to the standardized approach (according to Section 70 SolvV) which are discussed in Chapter 6.7 “Standardized Approach”, other IRBA exposure (described in Chapter 6.6 “Other IRBA Exposure”) as well as securitization positions (please refer to Chapter 7 “Securitization” for further details). The regulatory minimum requirements with regard to the respective coverage ratio thresholds have been met at all times.

## 6.2 Advanced Internal Ratings Based Approach

The advanced IRBA is the most sophisticated approach available under the regulatory framework for credit risk allowing the Group to make use of its internal rating methodologies as well as internal estimates of specific other risk parameters. Apart from using these internal concepts for regulatory purposes, 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”) driving the regulatory risk-weight and the credit conversion factor (“CCF”) as part of the regulatory exposure at default (“EAD”) estimation.

For the Group, excluding Postbank, the probability of default for customers is reflected in the Group’s internal rating systems. The Group assigns a probability of default to each relevant counterparty credit exposure as a function of a transparent and consistent 26-grid master rating scale. The borrower ratings assigned are derived on the grounds of 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 like 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 counterparts in the exposure classes central governments, institutions and corporates with the exception of small- and medium-sized entities. 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 modeling techniques, such as logistic regression. In line with Section 118 of SolvV, these models are complemented by human judgment and oversight to review model-based assignments and to ensure that the models are used appropriately. When the Group assigns its internal risk ratings, the Group compares them with external risk ratings assigned to the Group’s counterparties by the major international rating agencies, where possible. Although different rating methodologies are applied to the various customer segments in order to properly reflect customer-specific characteristics, they all adhere to the same risk management principles. Credit process policies provide guidance on the classification of customers into the various rating systems. For more information regarding the credit process and the respective rating methods used within that process, please refer to Chapter 5.2 “Credit Risk Ratings and Rating Governance”.

For Postbank's retail portfolios subject to the advanced IRBA, Postbank assigns a probability of default to each relevant counterparty credit exposure as a function of a consistent internal rating master scale. The ratings assigned are derived on the grounds of internally developed rating models which specify consistent and distinct customer-relevant criteria. These rating models are statistical scoring methods based on internal and external information relating to the borrower and use statistical procedures to evaluate a probability of default. The resulting scores are then mapped to Postbank's internal rating master scale.

The Group excluding Postbank applies internally estimated LGD factors as part of the advanced IRBA capital requirement calculation as approved by the BaFin. 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 concept of the LGD models ensures that the main drivers for losses (e.g. different levels and quality of collateralization and customer or product types or seniority of facility) are reflected in specific LGD factors.

As part of the application of the advanced IRBA the Group excluding Postbank applies specific 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. For advanced IRBA calculation purposes the bank applies the general principles as defined in Section 100 SolvV to determine the EAD of a transaction. In instances, however, 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 current utilization. When a transaction involves an additional contingent component (e.g. guarantees) a further percentage share (usage factor) is applied as part of the CCF model in order to estimate the amount of guarantees drawn in case of default. Where required under the advanced IRBA the CCFs are internally estimated. The calibrations of such parameters are based on statistical experience as well as internal historical data and consider customer and product type specifics. As part of the approval process, the BaFin assessed the Group's CCF models and stated their appropriateness for use in the process of regulatory capital requirement calculations.

Overall Postbank has similar standards in place to apply the advanced IRBA to its retail portfolios using internally estimated default probabilities, loss rates and conversion factors as the basis for calculating minimum regulatory capital requirements.

For derivative counterparty exposures as well as securities financing transactions (“SFT”) the Group, excluding Postbank, makes use of the IMM in accordance with Section 222 et seqq. SolvV. In this respect securities financing transactions encompass repurchase transactions, securities or commodities lending and borrowing as well as margin lending transactions (including prime brokerage). The IMM is a more sophisticated approach for calculating EAD for derivatives and SFT, again requiring prior approval from the BaFin before its first application. By applying this approach, the Group builds its EAD calculations on a Monte Carlo simulation of the transactions’ future market values. Within this simulation process, interest and FX rates, credit spreads, equity and commodity prices are modeled by stochastic processes and each derivative and securities financing transaction is revalued at each point of a pre-defined time grid by the Group’s internally approved valuation routines. As the result of this process, a distribution of future market values for each transaction at each time grid point is generated. From these distributions, by considering the appropriate netting and collateral agreements, the Group derives the exposure measures potential future exposure (“PFE”), average expected exposure (“AEE”) and expected positive exposure (“EPE”) mentioned in Chapter 5.7 “Counterparty Credit Risk from Derivatives”. The EPE measure evaluated on regulatory eligible netting sets defines the EAD for derivative counterparty exposures as well as for securities financing transactions within the Group’s regulatory capital calculations for the great majority of the Group’s derivative and SFT portfolio. For the small population of transactions for which a simulation cannot be computed, the EAD used within the IMM is derived from the current exposure method.

### Default Definition and Model Validation

A prerequisite for the development of rating methodologies and the determination of risk parameters is a proper definition, identification and storage of the default event of a customer. The Group applies a default definition in accordance with the requirements of Section 125 SolvV as confirmed by the BaFin as part of the IRBA approval process.

As an important element of the Group’s risk management framework the Group, excluding Postbank, and Postbank separately regularly validate its rating methodologies and credit risk parameters. Whereas the rating methodology validation focuses on the discriminatory power of the models, the risk parameter validation for PD, LGD and CCF analyzes the predictive power of those parameters when compared against historical default experiences.

According to the Group's standards, and in line with the SolvV-defined minimum requirements, the parameters PD, LGD and CCF as used by the Group excluding Postbank, are reviewed annually and a recalibration of specific parameter settings is triggered if required. In addition, ad hoc reviews are performed where appropriate as a reaction to quality deterioration at an early stage due to systematic changes of input factors (e.g. changes in payment behavior) or changes in the structure of the portfolio. The reviews conducted in 2011 for advanced IRBA rating systems triggered recalibrations of rating methodologies in 14 rating systems as well as recalibration of 63 additional risk parameter settings relating to CCFs and LGDs. Twelve new risk parameters are applied due to newly approved rating systems or due to increased granularity in existing risk parameter settings. None of the recalibrations individually nor the impact of all recalibrations in the aggregate materially impacted the capital requirements of the Group.

At Postbank the allocation mechanism of the master scale to the probabilities of default as well as the results of the estimations of the input parameters PD, CCF and LGD are reviewed annually.

The comparison of regulatory expected loss ("EL") estimates with actual losses recorded provides some insight into the predictive power of the Group's parameter estimations and, therefore, EL calculations.

The EL used in this comparison is the forecast credit loss from counterparty defaults of the Group's exposures over a one year period and is computed as the product of PD, LGD and EAD for performing exposures as at December 31st of the preceding year. The actual loss measure is defined by the Group as new provisions including recoveries on newly impaired exposures recorded in the Group's financial statements through profit and loss during the respective reported years.



While the Group believes that this approach provides some insight, the comparison has limitations as the two measures are not directly comparable. In particular, the parameter LGD underlying the EL calculation represents the loss expectation until finalization of the workout period while the actual loss as defined above represents the accounting information recorded for one particular financial year. Furthermore, EL is a measure of expected credit losses for a snapshot of the Group's credit exposure at a certain balance sheet date while the actual loss is recorded for a fluctuating credit portfolio over the course of a financial year, including losses in relation to new loans entered into during the year.

According to the methodology described above, the following table provides a comparison of EL estimates for loans, commitments and contingent liabilities as of year end 2010, 2009, 2008 and 2007, with actual losses recorded for the financial years 2011, 2010, 2009 and 2008, by regulatory exposure class. Postbank is firstly reflected in the comparison of EL estimates as of year end 2010 with actual losses recorded for the financial year 2011.

**Table 23 Expected Loss and Actual Loss by IRBA Exposure Class**

	Dec 31, 2010	2011	Dec 31, 2009	2010	Dec 31, 2008	2009	Dec 31, 2007	2008
in € m.	Expected loss <sup>1</sup>	Actual loss	Expected loss	Actual loss	Expected loss	Actual loss	Expected loss	Actual loss <sup>2</sup>
Central governments	17	–	2	–	2	–	2	–
Institutions	42	9	16	1	21	16	13	55
Corporates	492	607	471	358	591	1,665	320	251
Retail exposures secured by real estate property	222	359	118	101	120	140	127	125
Qualifying revolving retail exposures	2	30	2	5	2	7	2	4
Other retail exposures	390	301	301	282	311	315	226	223
<b>Total expected loss and actual loss in the advanced IRBA</b>	<b>1,166</b>	<b>1,306</b>	<b>910</b>	<b>747</b>	<b>1,047</b>	<b>2,143</b>	<b>690</b>	<b>658</b>

<sup>1</sup> The December 31, 2010 expected loss included € 315 million in relation to Postbank, which has been calculated on a basis consistent with Deutsche Bank methodology, however, limitations in data availability may lead to portfolio effects that are not fully estimated and thereby resulting in over or under estimation.

<sup>2</sup> Losses related to assets reclassified into loans under IAS 39 amendments were excluded from the actual loss for 2008 since, as of December 31, 2007, the related assets were not within the scope of the corresponding expected loss calculation for loans.

The increase in expected loss as of December 31, 2010 in comparison to December 31, 2009 as well as the higher 2011 actual loss primarily related to the inclusion of Postbank.

The decrease of the expected loss for 2010 compared to the expected loss for 2009 reflected the slightly improved economic environment after the financial crisis. In 2010 the actual loss was 18% below the expected loss as the actual loss was positively influenced by lower provisions taken for assets reclassified in accordance with IAS 39.

In 2009 actual losses exceeded the expected loss by 104 % driven mainly by material charges taken against a small number of exposures, primarily concentrated in Leveraged Finance, as well as the further deteriorating credit conditions not reflected in the expected losses for the Group's corporate exposures at the beginning of the year.

The following table provides a year-to-year comparison of the actual loss by regulatory exposure class. Postbank is firstly included in the reporting period 2011.

**Table 24 Actual Loss by IRBA Exposure Class**

in € m.	2011	2010	2009	2008	2007
Central governments	-	-	-	73	-
Institutions	9	1	16	55	4
Corporates	607	358	1,665	295	135
Retail exposures secured by real estate property	359	101	140	125	108
Qualifying revolving retail exposures	30	5	7	4	4
Other retail exposures	301	282	315	223	179
<b>Total actual loss by IRBA in the advanced IRBA</b>	<b>1,306</b>	<b>747</b>	<b>2,143</b>	<b>775</b>	<b>430</b>

New provisions established in 2011 were higher by € 0.6 billion primarily reflecting the inclusion of Postbank for the full year.

New provisions established in 2010 were lower by € 1.4 billion compared to 2009, reflecting predominately significantly reduced provisions required for assets reclassified in accordance with IAS 39. Measures taken on portfolio and country level led to a reduction in the actual loss for the Group's retail exposures in Spain and India, partially offset by increases in the consumer finance business in Poland. The observed decrease in actual loss were partially offset by provisions taken relating to the commercial banking activities acquired from ABN AMRO and Postbank.

The observed increase in actual loss of € 1.4 billion in 2009 compared to 2008 reflected the overall deterioration in credit conditions, predominantly on the Group's exposure against corporates. This increase was driven by 83 % by assets which had been reclassified in accordance with IAS 39, relating primarily to exposures in Leveraged Finance. Further provisions against corporate exposures were a result of deteriorating credit conditions, predominantly in Europe and the Americas. Increases recorded for the Group's retail exposures reflected the Group's strategy to invest in higher margin consumer finance business and were mainly a result of exacerbating economic crisis in Spain which adversely affected the Group's mortgage loan and commercial finance portfolios there and by its consumer finance business in Poland and India.

The observed increase in actual loss of € 345 million in 2008 compared to 2007 reflects the overall deterioration in credit conditions, predominantly on the Group's exposure against corporates and institutions. Increases recorded for the Group's retail exposures were mainly a result of the deteriorating credit conditions in Spain and organic growth in Poland.

### 6.3 Advanced IRBA Exposure

The advanced IRBA requires differentiating a bank's credit portfolio into various regulatory defined exposure classes namely central governments, institutions, corporates and retail clients. The Group identifies the relevant regulatory exposure class for each exposure by taking into account factors like customer-specific characteristics, the rating system used as well as certain materiality thresholds which are regulatory defined.

The tables below show the Group's advanced IRBA exposures, excluding Postbank, distributed on a rating scale and separately for each regulatory IRBA exposure class. The EAD is presented in conjunction with exposures-weighted average PD, LGD and risk weight ("RW") information. The information is shown after credit risk mitigation obtained in the form of financial, physical and other collateral as well as guarantees and credit derivatives. The effect of double default, as far as applicable, is considered in the average risk weight. It implies that for a guaranteed exposure a loss only occurs if the primary obligor and the guarantor fail to meet their obligations at the same time.

It has to be noted that the EAD gross information for exposures covered by guarantees or credit derivatives is assigned to the exposure class of the original counterparty respectively whereas the EAD net information assigns the exposures to the protection seller. As a consequence the EAD net can be higher than the EAD gross.

Table 25 EAD of Advanced IRBA Credit Exposures by PD Grade

	Dec 31, 2011							
	AAA – AA 0.00 – 0.04 %	A 0.04 – 0.11 %	BBB 0.11 – 0.5 %	BB 0.5 – 2.27 %	B 2.27 – 10.22 %	CCC 10.22 – 99.99 %	Default <sup>1</sup>	Total
<b>Central Governments</b>								
EAD gross in € m.	102,638	2,712	2,280	1,669	759	380	163	110,601
EAD net in € m.	113,128	2,716	2,023	818	276	0	163	119,124
Average PD in %	0.00	0.07	0.27	1.37	5.28	21.82	100.00	0.17
Average LGD in %	48.01	42.12	46.68	11.14	35.45	50.00	5.00	47.51
Average RW in %	0.27	23.36	45.71	33.39	124.98	289.48	62.50	2.17
<b>Institutions</b>								
EAD gross in € m.	27,831	36,188	15,543	4,227	182	230	136	84,337
EAD net in € m.	29,482	43,156	13,539	3,287	148	224	136	89,972
Average PD in %	0.04	0.06	0.25	0.99	4.65	21.89	100.00	0.33
Average LGD in %	23.65	29.18	22.81	20.29	29.75	14.55	10.01	26.02
Average RW in %	7.10	11.75	26.28	48.34	98.72	84.20	61.08	14.15
<b>Corporates</b>								
EAD gross in € m.	98,278	69,659	74,786	50,666	24,246	10,784	7,519	335,939
EAD net in € m.	97,813	70,082	69,951	45,518	21,159	10,019	7,169	321,711
Average PD in %	0.03	0.07	0.24	1.14	4.65	23.14	100.00	3.49
Average LGD in %	26.79	35.86	31.83	26.35	25.94	14.25	26.58	29.35
Average RW in %	9.72	18.51	32.57	56.93	92.11	78.46	29.02	31.27
<b>Retail Exposures Secured by Real Estate Property</b>								
EAD gross in € m.	1,286	3,444	15,979	30,695	10,446	2,784	1,185	65,819
EAD net in € m.	1,286	3,444	15,971	30,657	10,409	2,764	1,171	65,703
Average PD in %	0.03	0.08	0.28	1.18	4.36	21.66	100.00	4.01
Average LGD in %	8.70	9.14	9.57	9.99	10.19	10.45	14.00	9.94
Average RW in %	0.94	1.92	5.09	14.61	31.89	60.46	0.83	15.78
<b>Qualifying Revolving Retail Exposures<sup>2</sup></b>								
EAD gross in € m.	277	1,208	1,722	1,023	307	73	53	4,664
EAD net in € m.	277	1,208	1,722	1,023	307	73	53	4,664
Average PD in %	0.03	0.08	0.24	1.04	4.45	20.24	100.00	2.09
Average LGD in %	40.27	40.37	39.40	37.59	38.78	38.31	42.37	39.28
Average RW in %	1.10	2.12	5.11	15.50	45.14	102.69	6.95	10.57
<b>Other Retail Exposures<sup>2</sup></b>								
EAD gross in € m.	175	691	5,239	9,568	4,777	2,021	1,024	23,495
EAD net in € m.	199	756	5,393	9,593	4,841	1,980	935	23,697
Average PD in %	0.03	0.08	0.29	1.14	4.64	21.61	100.00	7.23
Average LGD in %	30.74	33.36	42.31	41.91	43.67	35.35	49.74	41.75
Average RW in %	3.66	7.51	23.36	45.56	67.18	83.31	2.32	44.81
<b>Total IRBA Exposures</b>								
EAD gross in € m.	230,486	113,901	115,549	97,848	40,718	16,273	10,081	624,856
EAD net in € m.	242,185	121,362	108,599	90,895	37,140	15,062	9,628	624,871
Average PD in %	0.02	0.07	0.25	1.15	4.57	22.64	100.00	2.59
Average LGD in %	36.25	32.90	28.35	22.24	24.03	16.45	26.79	30.84
Average RW in %	4.92	15.51	27.10	40.47	71.87	76.00	23.90	21.99

<sup>1</sup> The relative low risk weights in the column "Default" reflect the fact that capital requirements for defaulted exposures are principally considered as a deduction from regulatory capital equal to the difference in expected loss and allowances.

<sup>2</sup> The changes in comparison to 2010 reflect predominantly an exposure reassignment from the exposure class "Qualifying Revolving Retail Exposures" to "Other Retail Exposures" following a revision of the allocation method.

Dec 31, 2010

	AAA – AA 0.00 – 0.04 %	A 0.04 – 0.11 %	BBB 0.11 – 0.5 %	BB 0.5 – 2.27 %	B 2.27 – 10.22 %	CCC 10.22 – 99.99 %	Default <sup>1</sup>	Total
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### Central Governments

EAD gross in € m.	47,437	2,973	2,270	1,570	936	449	–	55,636
EAD net in € m.	57,821	2,973	2,193	666	450	1	–	64,104
Average PD in %	0.00	0.07	0.32	1.12	3.93	22.00	–	0.05
Average LGD in %	48.32	42.46	43.64	32.46	25.04	50.00	–	47.56
Average RW in %	0.63	20.06	51.92	66.75	87.20	287.23	–	4.58

### Institutions

EAD gross in € m.	44,182	56,871	22,617	6,328	2,230	983	628	133,839
EAD net in € m.	46,160	61,583	20,735	4,837	1,576	870	601	136,363
Average PD in %	0.04	0.06	0.25	0.97	4.65	18.72	100.00	0.73
Average LGD in %	23.28	30.50	26.56	27.56	23.64	23.07	27.92	27.21
Average RW in %	7.34	15.35	26.39	54.25	76.47	103.09	28.99	17.02

### Corporates

EAD gross in € m.	174,234	60,496	61,596	49,510	17,345	10,465	8,079	381,726
EAD net in € m.	175,342	58,069	58,665	45,993	15,112	9,826	7,857	370,864
Average PD in %	0.03	0.07	0.25	1.15	4.42	24.18	100.00	3.13
Average LGD in %	18.70	33.38	35.92	29.81	30.98	16.24	16.80	25.49
Average RW in %	6.10	17.55	36.62	65.54	107.38	92.58	24.12	26.89

### Retail Exposures Secured by Real Estate Property

EAD gross in € m.	1,509	5,094	12,308	27,332	9,746	1,962	1,199	59,150
EAD net in € m.	1,509	5,093	12,303	27,305	9,697	1,943	1,184	59,035
Average PD in %	0.03	0.08	0.27	1.20	4.31	21.70	100.00	4.05
Average LGD in %	4.53	6.80	8.62	10.86	10.34	10.03	14.32	9.84
Average RW in %	0.50	1.43	4.58	16.14	32.15	58.05	1.24	15.77

### Qualifying Revolving Retail Exposures

EAD gross in € m.	5	20	38	43	31	7	12	156
EAD net in € m.	5	20	38	43	31	7	12	156
Average PD in %	0.04	0.08	0.25	1.15	5.03	21.67	100.00	10.36
Average LGD in %	38.86	38.71	38.40	37.36	37.56	37.50	42.28	38.27
Average RW in %	1.11	1.96	5.16	16.55	47.53	102.96	9.03	20.93

### Other Retail Exposures

EAD gross in € m.	360	1,743	5,973	11,531	6,103	1,366	847	27,923
EAD net in € m.	398	1,825	6,124	11,592	6,078	1,349	774	28,140
Average PD in %	0.04	0.08	0.29	1.15	4.49	21.12	100.00	5.28
Average LGD in %	36.41	33.39	33.56	32.74	34.85	38.21	43.48	34.03
Average RW in %	4.61	7.21	18.12	35.71	53.52	89.59	3.49	35.14

### Total IRBA Exposures

EAD gross in € m.	267,727	127,197	104,803	96,315	36,390	15,232	10,765	658,429
EAD net in € m.	281,234	129,563	100,058	90,436	32,944	13,996	10,429	658,661
Average PD in %	0.03	0.07	0.26	1.16	4.41	23.20	100.00	2.51
Average LGD in %	25.49	31.17	30.64	24.35	25.19	17.93	19.17	26.96
Average RW in %	5.14	15.78	29.75	46.18	73.49	88.17	20.26	22.03

<sup>1</sup> The relative low risk weights in the column "Default" reflect the fact that capital requirements for defaulted exposures are principally considered as a deduction from regulatory capital equal to the difference in expected loss and allowances.

A year-on-year comparison reflects a decrease in EAD of advanced IRBA exposures in the Group's corporate and institutions segments which is largely driven by the inclusion of a larger percentage of securities financing transactions and to a lesser extent by derivative transactions under the expected positive exposure method ("EPE"). The EPE method considers the appropriate netting and collateral agreements in the EAD calculation and thereby reflecting the EAD net of collateral. The increase in the central governments segment is primarily due to increased interest earning deposits with central banks for liquidity purposes. The Group's securities financing transactions excluding Postbank are included in Table 25 "EAD of Advanced IRBA Credit Exposures by PD Grade" with a total EAD of € 80 billion as of December 31, 2011, and € 175 billion as of December 31, 2010. The corresponding RWA amounted to € 2.0 billion and € 3.2 billion at year end 2011 and 2010 respectively.

The tables below show the Group's undrawn commitment exposure treated within the advanced IRBA and broken down by regulatory exposure class. It also provides the corresponding exposure-weighted credit conversion factors and resulting EADs.

Table 26 EAD of Undrawn Commitments in the Advanced IRBA by Exposure Class

	Dec 31, 2011			Dec 31, 2010		
	Undrawn commitments in € m.	Weighted Credit Conversion Factor (CCF) in %	Exposure value for undrawn commitments (EAD) in € m.	Undrawn commitments in € m.	Weighted Credit Conversion Factor (CCF) in %	Exposure value for undrawn commitments (EAD) in € m.
Central governments	802	90	720	570	91	520
Institutions	1,575	44	700	2,822	43	1,218
Corporates	133,928	43	57,452	108,385	44	47,417
Retail exposures secured by real estate property	2,985	67	1,991	2,045	74	1,512
Qualifying revolving retail exposures <sup>1</sup>	5,416	72	3,916	137	59	81
Other retail exposures <sup>1</sup>	6,090	54	3,303	9,653	52	5,018
<b>Total EAD of undrawn commitments in the advanced IRBA</b>	<b>150,797</b>	<b>45</b>	<b>68,082</b>	<b>123,611</b>	<b>45</b>	<b>55,766</b>

<sup>1</sup>The changes in comparison to 2010 reflect predominantly an exposure reassignment from the exposure class "Qualifying Revolving Retail Exposures" to "Other Retail Exposures" following a revision of the allocation method.

The increase in undrawn commitments in 2011 compared to 2010 primarily reflects new exposure in the Corporates segment. In addition, certain CCFs have been recalibrated, which account – amongst other factors – for the exposure-weighted CCF movements in Retail exposures in comparison to 2010.

In addition to Table 25 "EAD of Advanced IRBA Credit Exposures by PD Grade", the table below shows Postbank exposures of the exposure class "retail" treated as advanced IRBA exposure distributed across expected loss bands, including the exposures considered to be defaulted as defined by SolvV. The sub-class "Qualifying revolving retail exposure" mainly represents overdrafts to business clients while overdrafts to private clients are treated under the standardized approach. The information is shown after credit risk mitigation obtained in the form of financial, physical and other collateral as well as guarantees and credit derivatives.

Table 27 EAD of Retail IRBA Credit Exposures by Exposure Class and Risk Category

	Dec 31, 2011				
	Expected-Loss-Band	Expected-Loss-Band	Expected-Loss-Band	Expected-Loss-Band	Total
	0.00 – 5.00 %	5.00 – 20.00 %	20.00 – 50.00 %	50.00 – 100.00 %	
Retail exposures secured by real estate property	68,001	832	540	137	69,510
Qualifying revolving retail exposures	447	18	–	–	465
Other retail exposures	6,842	200	179	186	7,407
<b>Total</b>	<b>75,290</b>	<b>1,050</b>	<b>719</b>	<b>323</b>	<b>77,382</b>

	Dec 31, 2010				
	Expected-Loss-Band	Expected-Loss-Band	Expected-Loss-Band	Expected-Loss-Band	Total
	0.00 – 5.00 %	5.00 – 20.00 %	20.00 – 50.00 %	50.00 – 100.00 %	
Retail exposures secured by real estate property	67,893	809	689	110	69,501
Qualifying revolving retail exposures	417	31	0	0	448
Other retail exposures	7,383	155	195	182	7,915
<b>Total</b>	<b>75,692</b>	<b>995</b>	<b>884</b>	<b>293</b>	<b>77,864</b>

## 6.4 Foundation Internal Ratings Based Approach

Within the Group, Postbank applies the foundation IRBA for the majority of its foundation IRBA eligible credit portfolios. 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 probability of default (“PD”) while the loss given default (“LGD”) and the credit conversion factor (“CCF”) are defined in the regulatory framework.

For the exposure classes central governments, institutions and corporates respective foundation IRBA rating systems have been developed. A probability of default is assigned to each relevant counterparty credit exposure as a function of a transparent and consistent rating master scale. The borrower ratings assigned are derived on the grounds of 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 like general customer behavior, financial and external data. The methods in use are based on statistical analyses and for specific portfolio segments amended by expert-based assessments while taking into account the relevant available quantitative and qualitative information. The rating systems consider external long-term ratings from the major rating agencies (i.e. Standard & Poor’s, Moody’s and Fitch Ratings).

For the foundation IRBA a default definition is applied in accordance with the requirements of Section 125 SolvV as confirmed by the BaFin as part of its IRBA approval process.

Postbank regularly validates its rating methodologies and credit risk parameters. Whereas the rating methodology validation focuses on the discriminatory power of the models, the risk parameter validation for PD analyzes its predictive power when compared against historical default experiences.

For derivative counterparty exposure treated under the foundation IRBA the current exposure method is applied. The current exposure method calculates the exposure at default as the sum of the positive fair value of derivative transactions and the respective regulatory add-on.

## 6.5 Foundation IRBA Exposure

The table below shows Postbank's foundation IRBA exposures distributed on a rating scale and separately for each regulatory IRBA exposure class. Postbank assigns its exposures to the relevant regulatory exposure class by taking into account factors like customer-specific characteristics and the rating system used. The EAD is presented in conjunction with exposures-weighted average risk weights ("RW"). The information is shown after credit risk mitigation obtained in the form of financial, physical and other collateral as well as guarantees and credit derivatives. EAD gross information for exposures covered by guarantees or credit derivatives are assigned to the exposures class of the original counterparty whereas the EAD net information assigns the exposure to the protection seller. Specialized lending exposures, non-credit obligation assets, equity exposures, securitization positions as well as defaulted exposures are excluded from the table. The exposures treated as defaulted from a regulatory perspective amounted to € 711 million for central governments, € 110 million for institutions and € 807 million for corporates as of December 31, 2011 compared to € 108 million for institutions and € 863 million for corporate as of December 31, 2010, following the default classification as applied by Postbank for regulatory purposes.



Table 28 EAD of Foundation IRBA Credit Exposures by PD Grade

	Dec 31, 2011				
	AAA to AA 0.000 – 0.045 %	A 0.045 – 0.125 %	BBB 0.125 – 0.475 %	BB to CCC > 0,475 %	Total
<b>Central Governments</b>					
EAD gross in € m.	80	-	46	-	126
EAD net in € m.	80	-	46	-	126
thereof: undrawn commitments	1	-	-	-	1
Average RW in %	18.75	-	47.83	-	29.37
<b>Institutions</b>					
EAD gross in € m.	1,052	18,226	9,860	144	29,282
EAD net in € m.	1,064	18,390	9,737	144	29,335
thereof: undrawn commitments	-	-	7	-	7
Average RW in %	11.18	11.67	16.94	88.89	13.37
<b>Corporates</b>					
EAD gross in € m.	439	2,352	7,763	2,552	13,106
EAD net in € m.	439	2,239	7,529	2,089	12,296
thereof: undrawn commitments	40	386	1,524	203	2,153
Average RW in %	12.98	29.34	52.90	114.60	57.21
<b>Total</b>					
EAD gross in € m.	1,571	20,578	17,669	2,696	42,514
EAD net in € m.	1,583	20,629	17,312	2,233	41,757
thereof: undrawn commitments	41	386	1,531	203	2,161
Average RW in %	12.07	13.59	32.66	112.90	26.29
	Dec 31, 2010				
	AAA to AA 0.000 – 0.045 %	A 0.045 – 0.125 %	BBB 0.125 – 0.475 %	BB to CCC > 0,475 %	Total
<b>Central Governments</b>					
EAD gross in € m.	77	-	60	-	137
EAD net in € m.	77	-	60	-	137
thereof: undrawn commitments	-	-	-	-	-
Average RW in %	13.72	-	53.30	-	30.99
<b>Institutions</b>					
EAD gross in € m.	3,788	35,123	3,352	157	42,420
EAD net in € m.	3,789	34,692	3,234	468	42,183
thereof: undrawn commitments	-	4	14	-	18
Average RW in %	12.55	14.85	37.52	55.21	16.83
<b>Corporates</b>					
EAD gross in € m.	2,302	2,181	7,340	3,128	14,951
EAD net in € m.	2,302	2,150	6,991	2,965	14,408
thereof: undrawn commitments	436	688	1,344	190	2,658
Average RW in %	13.42	29.79	60.55	109.60	58.51
<b>Total</b>					
EAD gross in € m.	6,167	37,304	10,752	3,285	57,508
EAD net in € m.	6,168	36,842	10,285	3,433	56,728
thereof: undrawn commitments	436	692	1,358	190	2,676
Average RW in %	12.88	15.72	53.27	102.17	27.44

## 6.6 Other IRBA Exposure

As an IRBA institution, the Group is required to treat equity investments, collective investment undertakings (“CIU”) and other non-credit obligation assets generally within the IRBA. For these exposure types typically regulatory-defined IRBA risk weights are applied.

The Group uses the simple risk-weight approach according to Section 98 SolvV for its investments in equity positions entered into since January 1, 2008. It distinguishes its exposure in equities which are non-exchange traded but sufficiently diversified, exchange-traded and other non-exchange-traded and then uses the regulatory-defined risk weights of 190 %, 290 % or 370 %, respectively. The only exemptions were equity exposures resulting from Postbank, which are no longer held, where related capital requirements were calculated following a probability of default approach in 2010. The EAD for these positions amounted to € 115 million as per December 31, 2010.

For certain CIU exposures the Group applies the “look through”-treatment which constitutes a decomposition of the CIU into its underlying investments. If such decomposition is performed the underlying investment components are assigned to their respective exposure class – either within the IRBA or standardized approaches – as if they were directly held. A sub-portion of the Group’s CIU exposures resulting from Postbank is covered within the standardized approach by applying risk weights provided by third parties in line with Section 83 (5) SolvV. More details on Postbank’s CIU exposures covered in the standardized approach are provided in Chapter 6.7 “Standardized Approach”. For the remaining collective investment undertakings the simple risk weight of 370 % is applied and assigned to the exposure class “equity investments”.

Exposures which are assigned to the exposure class “other non-credit obligation assets” receive an IRBA risk weight of 100 %.

The following table summarizes the Group’s IRBA exposure for equities, CIUs, other non-credit obligation assets including pension assets where regulatory risk weights are applied. The volumes displayed are the regulatory exposure values. Credit risk mitigation techniques have not been applied.

**Table 29 EAD of Equity Investments, CIUs and Other Non-credit Obligation Assets by Risk Weight**

in € m.	Dec 31, 2011	Dec 31, 2010
0 %	1,912	1,141
100 %	7,366	7,754
190 %	210	355
290 %	350	334
370 %	2,186	3,266
1250 %	794	640
<b>Total EAD of equity investments, CIUs and other non-credit obligation assets</b>	<b>12,818</b>	<b>13,490</b>

The following table summarizes Postbank's IRBA exposure for specialized lending where regulatory risk weights are applied. The volumes displayed are the regulatory exposure values, hence EAD. Credit risk mitigation techniques have not been applied. The exposures relate to Postbank's commercial loans for residential construction, loans to property developers, operator models, real estate and equipment leasing, real estate located outside Germany, and private mortgage loans financing the construction of properties with more than ten residential units.

**Table 30 EAD of Postbank Specialized Lending by Risk Weight**

in € m.	Dec 31, 2011	Dec 31, 2010
Risk weight category 1 (strong)	12,328	13,605
Risk weight category 2 (good)	1,033	995
Risk weight category 3 (satisfactory)	811	449
Risk weight category 4 (weak)	329	328
Risk weight category 5 (defaulted)	1,960	2,556
<b>Total EAD of Postbank specialized lending</b>	<b>16,461</b>	<b>17,932</b>

## 6.7 Standardized Approach

The Group treats a subset of its credit risk exposures within the standardized approach. The standardized approach measures credit risk either pursuant to fixed risk weights, which are regulatorily predefined, or through the application of external ratings.

The Group assigns certain credit exposures permanently to the standardized approach in accordance with Section 70 SolvV. 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 more than half of the exposures carried in the standardized approach and receive predominantly a risk weight of zero percent. For internal purposes, however, these exposures are assessed via an internal credit assessment and fully integrated in the risk management and economic capital processes.

In line with Section 66 SolvV, the Group assigns further – generally IRBA eligible – exposures permanently to the standardized approach. This population comprises several small-sized portfolios, which are considered to be immaterial on a stand-alone basis for inclusion in the IRBA.

Other credit exposures are temporarily assigned to the standardized approach and the Group plans to transfer them to the IRBA over time. The prioritization and the corresponding transition plan is discussed and agreed with the competent authorities, the BaFin and the Bundesbank.

Equity positions entered into before January 1, 2008 are subject to the transitional arrangement to exempt them from the IRBA and a risk weight of 100 % is applied according to the standardized approach treatment.

In order to calculate the regulatory capital requirements under the standardized approach, the Group uses eligible external ratings from Standard & Poor's, Moody's, Fitch Ratings and in some cases from DBRS. These latter ratings have been newly applied in the standardized approach for a small number of exposures in 2009. Ratings are applied to all relevant exposure classes in the standardized approach. If more than one rating is available for a specific counterparty, the selection criteria as set out in Section 44 SolvV are applied in order to determine the relevant risk weight for the capital calculation. Moreover, given the low volume of exposures covered under the standardized approach and the high percentage of (externally rated) central government exposures therein, the Group does not infer borrower ratings from issuer ratings.

The following table shows the Group's exposure values in the standardized approach by risk weight. The information is shown before and after credit risk mitigation obtained in the form of eligible financial collateral, guarantees and credit derivatives. The table excludes Postbank's CIU exposures assigned to the standardized approach which are displayed in the Table 32 "EAD of CIUs of Postbank in the Standardized Approach by Risk Weight" thereafter.

Table 31 EAD in the Standardized Approach by Risk Weight

in € m.	Dec 31,2011		Dec 31,2010	
	Before credit risk mitigation	After credit risk mitigation	Before credit risk mitigation	After credit risk mitigation
0 %	115,572	118,762	120,443	106,412
5 %	-	-	17	17
10 %	983	983	987	987
20 %	2,509	4,265	4,245	6,114
22 %	-	-	2	2
35 %	4,059	4,046	4,280	4,270
50 %	5,242	5,388	5,080	4,881
55 %	-	-	298	298
75 %	17,897	14,705	19,254	15,598
100 %	41,009	25,680	49,566	28,917
110 %	-	-	80	80
150 %	1,411	1,401	1,636	1,621
<b>Total EAD in the standardized approach</b>	<b>188,683</b>	<b>175,230</b>	<b>205,888</b>	<b>169,197</b>

The following table shows the Postbank exposure values for CIUs covered within the standardized approach. It comprises bonds in the form of collective investment undertakings assigned to the standardized approach based on a "look through"-treatment as well as the exposure values for collective investment undertakings with risk weights calculated by third parties in the standardized approach by risk weight. Credit risk mitigation techniques have not been applied.

Table 32 EAD of CIUs of Postbank in the Standardized Approach by Risk Weight

in € m.	Dec 31,2011	Dec 31,2010
<b>Bonds in CIUs</b>		
0 %	80	172
11 %	87	21
22 %	234	244
55 %	416	445
110 %	747	691
200 %	7	72
300 %	512	356
<b>EAD for bonds in CIUs</b>	<b>2,083</b>	<b>2,001</b>
<b>CIUs with risk weight calculated by third parties</b>		
< 22 %	621	120
<b>EAD for CIUs with risk weight calculated by third parties</b>	<b>621</b>	<b>120</b>
<b>Total EAD for CIUs in the standardized approach</b>	<b>2,704</b>	<b>2,121</b>

## 6.8 Regulatory Application of Credit Risk Mitigation Techniques

Risk-weighted assets and regulatory capital requirements can be managed actively by credit risk mitigation techniques. As a prerequisite for recognition in regulatory calculations, the Group must adhere to certain minimum requirements as stipulated in the SolvV regarding collateral management, monitoring processes and legal enforceability.

The range of collateral being eligible for regulatory recognition is dependent predominantly on the regulatory capital calculation method used for a specific risk position. The principle is that a higher degree of sophistication with regard to the underlying methodology generally leads to a wider range of admissible collateral and options to recognize protection via guarantees and credit derivatives. However, also the minimum requirements to be adhered to and the mechanism available to reflect the risk mitigation benefits are predominantly a function of the regulatory calculation method applied.

The advanced IRBA generally accepts all types of financial collateral, as well as real estate, collateral assignments and other physical collateral. In the Group's application of the advanced IRBA, there is basically no limitation to the range of accepted collateral as long as the Group can demonstrate to the competent authorities that reliable estimates of the collateral values can be generated and that basic requirements are fulfilled.

The same principle holds true for taking benefits from guarantee and credit derivative arrangements. Within the advanced IRBA, again there are generally no limitations with regard to the range of eligible collateral providers as long as some basic minimum requirements are met. However, collateral providers' credit quality and other relevant factors are incorporated through the Group's internal models.

In the Group's advanced IRBA calculations excluding Postbank, financial and other collateral is generally considered through an adjustment to the applicable LGD as the input parameter for determining the risk weight. For recognizing protection from guarantees and credit derivatives, generally a PD substitution approach is applied, i.e. within the advanced IRBA risk-weight calculation the PD of the borrower is replaced by the protection seller's or guarantor's PD. However, for certain guaranteed exposures and certain protection providers the so-called double default treatment is applicable. The double default effect implies that for a guaranteed exposure a loss only occurs if the originator and the guarantor fail to meet their obligations at the same time.

The following table presents the exposure values before credit risk mitigation as well as to the extent they are covered by eligible collateral, guarantees and credit derivatives in the advanced IRBA excluding Postbank, broken down into the respective exposure classes.

**Table 33 Collateralized Counterparty Credit Risk Exposure in the Advanced IRBA by Exposure Class**

in € m.	Dec 31, 2011				Dec 31, 2010			
	Total EAD	Eligible advanced IRBA collateral	Guarantees and credit derivatives	Total EAD collateralized <sup>1</sup>	Total EAD	Eligible advanced IRBA collateral	Guarantees and credit derivatives	Total EAD collateralized <sup>1</sup>
Central governments	110,601	4,611	1,977	6,588	55,636	2,920	1,928	4,848
Institutions	84,337	22,212	4,190	26,402	133,839	37,478	5,784	43,262
Corporates	335,939 <sup>2</sup>	112,101	36,443	148,543	381,726 <sup>2</sup>	175,229	30,993	206,222
Retail	93,979	54,838	682	55,521	87,229	50,989	604	51,593
<b>Total</b>	<b>624,856</b>	<b>193,762</b>	<b>43,292</b>	<b>237,054</b>	<b>658,429</b>	<b>266,615</b>	<b>39,310</b>	<b>305,924</b>

<sup>1</sup> Excludes collateralization which is reflected in the EPE measure.

<sup>2</sup> Includes exposure subject to dilution risk of € 1.1 billion per year end 2011 and € 608 million per year end 2010.

Postbank retail exposures, which are subject to the advanced IRBA and not included in this table, amount to € 77.4 billion in EAD as of December 31, 2011, and € 77.9 billion as December 31, 2010. Thereof an exposure of € 38.5 billion as of December 31, 2011, and € 37.1 billion as of December 31, 2010, is collateralized by financial or other advanced IRBA-eligible collateral.

The foundation IRBA sets stricter limitations with regard to the eligibility of credit risk mitigation compared to the advanced IRBA but allows for consideration of financial collateral, guarantees and credit derivatives as well as other foundation IRBA-eligible collateral like mortgages and security assignments.

The financial collateral recognized by Postbank in its foundation IRBA essentially comprises cash, bonds and other securities related to repo lending.

The following table presents Postbank's foundation IRBA related exposure values before credit risk mitigation as well as to the extent they are covered by eligible collateral, guarantees and credit derivatives, broken down into the respective exposure classes.

**Table 34 Collateralized Counterparty Credit Risk Exposure in the Foundation IRBA by Exposure Class**

	Dec 31, 2011				
in € m.	Total EAD	Financial collateral	Other collateral	Guarantees and credit derivatives	Total EAD collateralized
Central governments	697	-	-	-	-
Institutions	29,392	9,983	-	221	10,204
Corporates	30,369	-	11,528	835	12,363
<b>Total</b>	<b>60,458</b>	<b>9,983</b>	<b>11,528</b>	<b>1,056</b>	<b>22,567</b>

	Dec 31, 2010				
in € m.	Total EAD	Financial collateral	Other collateral	Guarantees and credit derivatives	Total EAD collateralized
Central governments	137	-	-	-	-
Institutions	42,528	9,442	-	613	10,055
Corporates	33,747	-	19,398	1,109	20,507
<b>Total</b>	<b>76,412</b>	<b>9,442</b>	<b>19,398</b>	<b>1,722</b>	<b>30,562</b>

In the standardized approach, collateral recognition is limited to eligible financial collateral, such as cash, gold bullion, certain debt securities, equities and CIUs, in many cases only with their volatility-adjusted collateral value. In its general structure, the standardized approach provides a preferred (lower) risk-weight for "claims secured by real estate property". Given this preferred risk-weight real estate is not considered a collateral item under the standardized approach. Further limitations must be considered with regard to eligible guarantee and credit derivative providers.

In order to reflect risk mitigation techniques in the calculation of capital requirements the Group applies the financial collateral comprehensive method since the higher sophistication of that method allows a broader range of eligible collateral. Within this approach, financial collateral is reflected through a reduction in the exposure value of the respective risk position, while protection taken in the form of guarantees and credit derivatives is considered by means of a substitution, i.e., the borrower's risk weight is replaced by the risk weight of the protection provider.

The following table presents the Group's exposure values before credit risk mitigation as well as to the extent they are covered by financial collateral, guarantees and credit derivatives in the standardized approach broken down into the respective exposure classes, including Postbank's CIU exposures assigned to the standardized approach.

Table 35 Collateralized Counterparty Credit Risk Exposure in the Standardized Approach by Exposure Class

in € m.	Dec 31, 2011				Dec 31, 2010			
	Total EAD	Financial collateral	Guarantees and credit derivatives	Total EAD collateralized	Total EAD	Financial collateral	Guarantees and credit derivatives	Total EAD collateralized
Central governments	93,867	246	2	248	83,522	9,947	1	9,947
Regional governments and local authorities	18,340	60	-	60	17,908	6	-	6
Other public sector entities	2,607	534	-	534	3,348	-	194	194
Multilateral development banks	270	-	-	-	196	-	-	-
International organizations	249	-	-	-	130	-	-	-
Institutions	3,967	365	106	471	19,956	8,567	103	8,670
Covered bonds issued by credit institutions	983	-	-	-	1,018	-	-	-
Corporates	34,131	9,801	1,253	11,054	43,356	15,984	1,679	17,663
Retail	17,899	1,302	1,892	3,194	19,254	1,414	2,242	3,656
Claims secured by real estate property	7,540	22	-	22	7,455	22	-	22
Collective investment undertakings	2,704	-	-	-	2,121	-	-	-
Equity investments	7,163	3,641	-	3,641	7,201	3,171	-	3,171
Other items	99	-	-	-	171	-	-	-
Past due items	1,569	13	5	17	2,375	21	4	25
<b>Total</b>	<b>191,387</b>	<b>15,984</b>	<b>3,258</b>	<b>19,241</b>	<b>208,011</b>	<b>39,132</b>	<b>4,222</b>	<b>43,354</b>

The decrease in total EAD collateralized is mainly driven by decreases in Security Financing Transactions in the segments "Central Governments" and "Institutions" as well as in derivatives in the segment "Corporates".



## 7. Securitization

### 7.1 Overview of Activities Undertaken by the Group

The Group engages in various business activities that use securitization structures. The principle purposes are to provide clients with access to risk and returns related to specific portfolios of assets, to provide clients with access to funding and to manage the Group's credit risk exposure.

A participant in the securitization market can typically adopt three different roles: the originator, the sponsor or the investor role. An originator is an institution which is involved, either itself or through its' related entities directly or indirectly, in the origination or purchase of the securitized exposures. In a sponsorship role, an institution establishes and manages an asset-backed commercial paper program ("ABCP") or other securitization transaction, but has neither originated nor taken the purchased assets on its balance sheet. All other securitization positions entered into by the Group are assumed in the capacity as an investor. In order to achieve its business objectives the Group acts in all three roles on the securitization markets. However, Postbank does not assume the role of a sponsor.

#### Banking Book

As an originator, the Group uses securitizations primarily as a strategy to reduce credit risk. These credit risk management related transactions are conducted by different units within the Group. The Loan Exposure Management Group ("LEMG") uses, amongst others, synthetic securitizations to manage the credit risk of loans and lending-related commitments of the international investment-grade portfolio and the medium-sized German companies' portfolio within the Corporate & Investment Bank ("CIB") group division. The credit risk is predominantly transferred to counterparties synthetically through credit derivatives.

While the overall volume of credit risk transfer as originator remained almost stable during 2011 for LEMG, it decreased significantly for Global Transaction Banking and Markets. This resulted mainly from the reduction of credit risk coverage the Group received under the terms and conditions of the 2010 acquisition of European assets in relation to small and medium entities ("SME"), and the de-recognition of first loss credit default swap protection on a portfolio of derivative counterparty credit risk exposures.

In prior years Postbank originated three synthetic securitization transactions with an exposure securitized of € 4.1 billion. The underlying exposures are financings of residential real estate assets located in Germany and Italy. The transactions served to reduce regulatory capital requirements on the one hand and concentration risk on the other hand.

On a limited basis the Group has entered into securitization transactions as part of an active liquidity risk management strategy during 2008 and 2009. These transactions do not transfer credit risk and are therefore not included in the quantitative part of this chapter.

The Group sets up, sponsors and administers a number of ABCP programs. These programs provide customers with access to funding in the commercial paper market and create investment products for clients. As an administrative agent for the commercial paper programs, the Group facilitates the purchase of non-Deutsche Bank Group loans, securities and other receivables by the commercial paper conduit ("conduit"), which then issues to the market high-grade, short-term commercial paper, collateralized by the underlying assets, to fund the purchase. The conduits require sufficient collateral, credit enhancements and liquidity support to maintain an investment grade rating for the commercial paper. The Group is acting as provider of liquidity and credit enhancement to these conduits with facilities recorded in the Group's regulatory banking book. There are also instances in which the Group will face the conduit on foreign exchange and interest rate swaps which are recorded in the trading book.

Furthermore, the Group acts as an investor in third party securitizations through the purchase of third party issued securitizations, tranches or provides liquidity/credit support to which it, and in some instances other parties, provide financing. Additionally, the Group assists third party securitizations by providing derivatives related to securitization structures. These include currency, interest rate, equity and credit derivatives.

Nearly half of the Group's securitization activity in 2011 was in the originator space, predominantly through transactions for LEMG, i.e. from de-risking activity for the Groups' existing loan portfolio. Of the remainder, for approximately two thirds the Group assumed the investor role, and for the rest the Group acted as sponsor.

In the investor space Postbank was actively derisking its portfolio in 2011. Across the entire Postbank securitization portfolio, approximately two thirds are invested in more senior classes of tranches. With regard to credit monitoring and review, Postbank follows similar processes as outlined below for the rest of the Group.

Overall, the securitization positions are exposed to the performance of diverse asset classes, including primarily corporate senior loans or unsecured debt, consumer debt such as auto loans or student loans, as well as residential- or commercial 1st and 2nd lien mortgages. Generally the Group is active across the entire capital structure with an emphasis on the more senior tranches. The subset of re-securitization positions are predominantly backed by US residential mortgage-backed mezzanine securities.

Primary recourse for securitization exposures lies with the underlying assets. The related risk is mitigated by credit enhancement typically in the form of overcollateralization, subordination, reserve accounts, excess interest, or other support arrangements. Additional protection features include performance triggers, financial covenants and events of default stipulated in the legal documentation which, when breached, provide for the acceleration of repayment, rights of foreclosure and/or other remediation.

All securitization exposures are subject to regular performance reviews which include checks of the periodic servicer reports against any performance triggers/covenants in the loan documentation, as well as the overall performance trend in the context of economic, geographic and sector developments. Monitoring of the re-securitization subset takes into consideration the performance of the securitized tranches' underlying assets, to the extent available.

For longer-term lending-related commitments an internal rating review is required at least annually. Significant negative (or positive) changes in asset performance can trigger an earlier review date. Full credit reviews also are required annually, or, for highly rated exposures, bi-annually. Furthermore, there is a separate, usually quarterly, watch list process for exposures identified to be at a higher risk of loss, which requires a separate assessment of asset performance. It includes a review of the exposure strategy and identifies next steps to be taken to mitigate loss potential. There is no difference in approach for re-securitization transactions.

Securitization activities have an impact on the liquidity activity of the Group. On one hand, the Group has entered into securitization transactions as part of an active liquidity risk management strategy during 2008 and 2009, as mentioned before. On the other hand, the Group is exposed to potential drawdown under liquidity backstop facilities supporting the Deutsche Bank-sponsored asset-backed commercial paper or other revolving commitments. Overall liquidity risk is monitored by the Group's Treasury department and is included in their Group-wide liquidity planning and regular stress testing.

Evaluation of structural integrity is another important component of risk management for securitization, focusing on the structural protection of a securitization as defined in the legal documentation (e.g., perfection of security interest, segregation of payment flows, and rights to audit). The evaluation for each securitization is performed by a dedicated team who engages third-party auditors, prepares audit scopes, and reviews the results of such external audits. The results of these risk reviews and assessments are included in the credit and rating review process performed by Credit Risk Management, who also perform own due diligence as considered necessary.

Hedging requirements for securitization exposures are mandated in the context of each individual credit approval, and are re-visited at each internal credit or rating review. However, credit risk management is conducted mostly through avoidance of undue risk concentration on borrower, servicer and asset class levels. Higher initial underwritings are de-risked to a final hold mandated in the credit approval mainly through syndication, or sales in the secondary market. Success of de-risking is being monitored and reported regularly to senior management. There is only very limited credit hedging activity in the banking book.

Furthermore, in the context of structuring securitization transactions, hedging usually takes place to insulate the special purpose entities (“SPE”) from interest rate and cross-currency risk – as far as required depending on the assets being included. When this hedging is provided by the Group, the related counterparty risk to the securitization structure is included in the Credit Risk Management review process and reported below as part of the banking book exposure despite effectively being part of the Group’s trading book. If this hedging is not provided by the Group, it is largely conducted with large international financial institutions with strong financials. Such indirect counterparty risk is reported to the hedging counterparty’s credit officer to become part of his/her credit evaluation.

Overall, Postbank has conducted a buy and hold strategy with investments in securitization exposures. Therefore, only minor hedges are currently in place to mitigate cross-currency risks.

### Trading Book

In the trading book, the Group acts as originator, sponsor and investor. The primary activities in the trading book fall under the role of investor. In this capacity, the Group’s main objectives are to serve as a market maker in the secondary market. The market making function consists of providing two way markets (buy and sell) to generate flow trading revenues and provide liquidity for customers. As of December 31, 2011 more than 90 % of the market value of securitizations held in the trading book was in positions where the Group had the role of investor.

In the role of originator, the Group finances loans to be securitized; in the current market environment the Group’s role as originator is predominantly being performed in the commercial real estate business. Trading book activities where the Group has the role of sponsor are minimal.

The Group holds a portfolio of asset backed securities (“ABS”) correlation trades that is in the process of being wound down. Other than de-risking the position, no new activity is being performed by the Group. The positions are being actively risk managed and are part of Market Risk Management’s Governance Framework (described below).

The Group’s securitization desks trade assets across all capital structures, from senior bonds with large subordination to first loss subordinate tranches, across both securitizations and re-securitizations. The varying degrees of risk along the capital structure are reflected by the price in which the asset trades; this is because the market requires minimum loss adjusted returns on their investments. Securitization positions consist mostly of residential mortgage backed securities (“RMBS”) and commercial mortgage backed securities (“CMBS”) backed by first and second lien loans, collateralized loan obligations (“CLOs”) backed by corporate senior loans and unsecured debt and consumer ABS backed by secured and unsecured credit.

In 2011, as a result of the European crisis and overall slowdown in global growth, liquidity in securitized products has decreased; this has been particularly evident in the second half of the year as trading volumes came down. Other potential risks that exist in securitized assets are prepayment, default and severity uncertainty and servicer performance risk. Note that trading book assets are marked to market and the previous mentioned risks are reflected in the position's price.

The Group's Market Risk Management Governance Framework applies to all securitization positions held within the trading book. The Risk Governance Framework applied to securitization includes policies and procedures with respect to new product approvals and new transaction approvals as well as inventory management systems and trade entry. The Risk Governance Framework applied to securitization also includes policies and procedures with respect to risk models and measurements. All securitization positions are captured and measured within value-at-risk, stressed value-at-risk, and economic capital. The measurements are dependent upon internal and external models and processes, which includes the use of 3rd party's assessment of risks associated with the underlying collateral. Furthermore the Risk Governance Framework includes risk reporting and limits, at the global, regional and product levels. All securitization positions held within the trading book are captured, reported and limited within this framework and changes in credit and market risks are reported. The limit structure includes value-at-risk and market value product specific limits. The processes for securitization and re-securitizations are similar.

The Group's Traded Credit Positions ("TCP") process captures the issuer risk for securitization positions in the trading book. TCP-Securitization sets position level limits based on asset class and rating. In addition collateral level stress testing and performance monitoring is incorporated into the risk management process. The Traded Credit Positions process covers both securitizations and re-securitizations.

The securitization desks incorporate a combination of macro and position level hedges to mitigate credit, interest rate and certain tail risks. Some of the hedging products utilized include interest rate swaps and product specific indices. The market risks of the hedges (both funded and unfunded) are incorporated and managed within the Group's Market Risk Management Governance Framework as described above; and, the counterparty risks of the hedges (both funded and unfunded), which are comprised primarily of major global financial institutions, are managed and approved through a formalized risk management process performed by Credit Risk Management.

## 7.2 Accounting and Valuation Policies for Securitizations

The Group securitizes various consumer and commercial financial assets, which is achieved via the sale of these assets to an SPE, which in turn issues securities to investors.

The Group may consolidate SPEs for financial statement purposes that it established, sponsors or with which it has a contractual relationship. The Group will consolidate an SPE when it has the power to govern the financial and operating policies, generally accompanying a shareholding, either directly or indirectly, of more than one half of the voting rights or where according to the Standing Interpretations Committee Interpretation No. 12 (SIC-12) "Consolidation – Special Purpose Entities," when the activities are so narrowly defined, or if it is not evident who controls the financial and operating policies of the SPE, a range of other factors are considered. When assessing whether to consolidate an SPE under SIC-12, the Group evaluates a range of factors, including whether (1) the activities of the SPE are being conducted on behalf of the Group according to its specific business needs so that the Group obtains the benefits from the SPE's operations, (2) the Group has decision-making powers to obtain the majority of the benefits, (3) the Group obtains the majority of the benefits of the activities of the SPE, or (4) the Group retains the majority of the residual ownership risks related to the assets in order to obtain the benefits from its activities. The consolidation assessment considers the exposures that both the Group and third parties have in relation to the SPE via derivatives, debt and equity instruments and other instruments. This assessment will also consider the impact of any financial support offered by the Group to the SPE. The Group consolidates an SPE if an assessment of the relevant factors indicates that it controls the SPE. Therefore the Group reassesses the treatment of SPE's for consolidation when there is an overall change in the SPE's arrangements or when there has been a substantial change in the relationship between the Group and the SPE.

The transferred assets (whether banking book or trading book) may qualify for derecognition in full or in part, under the derecognition of financial assets accounting policy. When an asset is derecognized a gain or loss equal to the difference between the consideration received and the carrying amount of the transferred asset is recorded. Synthetic securitization structures typically involve derivative financial instruments. Transfers that do not qualify for derecognition may be reported as a secured financing or result in the recognition of continuing involvement liabilities; no gain or loss is recognized in such instances. The investors and the securitization vehicles generally have no recourse to the Group's other assets in cases where the issuers of the financial assets fail to perform under the original terms of those assets.

When these securitized assets are held at fair value, consistent with the valuation of similar financial instruments, the fair value of retained tranches or the financial assets is initially and subsequently determined using market price quotations where available or internal pricing models that utilize variables such as yield curves, prepayment speeds, default rates, loss severities, interest rate volatilities and spreads. The assumptions used for valuation are based on observable transactions in similar securities and are verified by external pricing sources, where available. Where observable transactions in similar securities and other external pricing sources are not available, management judgment must be used to determine fair value.

In situations where the Group has a present obligation (either legal or constructive) to provide financial support to an unconsolidated securitization SPE a provision will be created if the obligation can be reliably measured and it is probable that there will be an outflow of economic resources required to settle it.

Assets purchased or originated with the intent to securitize are typically held at fair value. However the Group, may also periodically securitize assets which are held at amortized cost. For further detail on the Group's accounting and valuation policies please refer to Note 01 "Significant Accounting Policies" and Note 14 "Financial Instruments carried at Fair Value" in the Group's Financial Report 2011. In addition, the Management Report of the Group's Financial Report 2011 includes a discussion of SPEs.

### 7.3 Types of Special Purposes Entities used by Deutsche Bank as Sponsor of Securitizations

The Group establishes and administers as sponsor asset-backed commercial paper ("ABCP") programs through which it securitizes assets acquired from third parties. Each program consists of a commercial paper issuing special purpose entity (the so-called "conduit") and one or more supporting special purpose entities (the "SPE") through which the assets are purchased. The conduits and the SPEs are organized as limited liability companies or in an equivalent legal form. The assets securitized through the ABCP programs include auto loans, auto leases, auto dealer floor plan receivables, student loans, credit card receivables, trade receivables, capital call receivables, residential and commercial mortgage loans, future flows and other assets.

The Group assumes both on-balance sheet exposure and off-balance sheet exposure which stems from liquidity facilities granted to the SPEs or the related conduit, letters of credit, total return swaps or similar credit enhancements, interest rate and foreign exchange related derivatives and commercial papers.

Occasionally, on a transaction by transaction basis, the Group assists special purpose entities in acquiring third party assets where the Group, considering its overall contribution e.g., its influence on selecting the securitized assets and structuring the tranches, qualifies as sponsor. This type of transactions may include multi-seller securitizations where a small portion of the securitized assets was originated by the Group, e.g., performing and non-performing residential and commercial mortgage loans. The Group assumes on-balance sheet exposure and off-balance sheet exposure including first loss tranches or interest rate and foreign exchange related derivatives.

The Group as originator or sponsor of a securitization transaction sells ABCPs and other securitization tranches (or arranges for such sale through mandated market making institutions) solely on an "execution only" basis and only to sophisticated operative corporate clients that rely on their own risk assessment. In the ordinary course of business, the Group does not offer such tranches to operative corporate clients to which, at the same time, it offers investment advisory services.

## 7.4 Regulatory Securitization Framework

Section 1b of the German Banking Act (Kreditwesengesetz – KWG) defines which types of transactions and positions must be classified as securitization transactions and securitization positions for regulatory reporting.

Securitization transactions are basically defined as transactions in which the credit risk of a securitized portfolio is divided into at least two securitization tranches and where the payments to the holders of the tranches depend on the performance of the securitized portfolio. The different tranches are in a subordinate relationship that determines the order and the amount of payments or losses assigned to the holders of the tranches (waterfall). Loss allocations to a junior tranche will not already lead to a termination of the entire securitization transaction, i.e. senior tranches survive loss allocations to subordinate tranches.

Securitization positions can be acquired in various forms including investments in securitization tranches, derivative transactions for hedging interest rate and currency risks included in the waterfall, liquidity facilities, credit enhancements, unfunded credit protection or collateral for securitization tranches.

The approach for the calculation of the regulatory capital requirements for banking book and trading book securitization positions is prescribed by the German solvency regulation (Solvabilitätsverordnung – “SolvV”).

### Calculation of Regulatory Capital Requirements for Banking Book Securitizations

The regulatory capital requirements for the credit risk of banking book securitizations are determined based on the securitization framework pursuant to Sections 225 to 268 SolvV, which distinguishes between credit risk standardized approach (“CRSA”)-securitization positions and internal ratings based approach (“IRBA”)-securitization positions. The classification of securitization positions as either CRSA- or IRBA-securitization positions depends on the nature of the securitized portfolio. Basically, CRSA-securitization positions are those where the securitized portfolio predominantly includes credit risk exposures, which would qualify as CRSA-exposures under the credit risk framework if they would be held by the Group directly. Otherwise, if the majority of the securitized portfolio would qualify as IRBA-exposures, the securitization positions qualify as IRBA-securitization positions.

The risk weights of CRSA-securitization positions are derived from their relevant external ratings, when applicable. External ratings must satisfy certain eligibility criteria for being used in the risk weight calculation. Eligible external ratings are taken from Standard & Poor’s, Moody’s, Fitch Ratings and DBRS. If more than one eligible rating is available for a specific securitization position, the relevant external rating is determined as the second best eligible rating in accordance with the provisions set forth in Sections 236 to 237 SolvV. CRSA-securitization positions with no eligible external rating are deducted from liable capital unless they qualify for the application of the risk concentration approach pursuant to Section 243 (2) SolvV which might lead to a risk weight below 1250 %.



The risk weight of IRBA-securitization positions is determined according to the following hierarchy:

- If one or more eligible external ratings exist for the IRBA-securitization position, or if an external rating can be inferred from an eligible external rating of a benchmark securitization position, the risk weight is derived from the relevant external rating (ratings based approach).
- Otherwise, if no eligible external rating exists or can be inferred, the risk weight of the IRBA-securitization position will generally be determined based on the supervisory formula approach pursuant to Section 258 SolvV or the internal assessment approach pursuant to Section 259 SolvV.

If neither of the aforementioned approaches can be applied, the position is deducted from liable capital.

The ratings based approach applies to the largest part of the Group's IRBA- and CRSA-securitization positions, largely in the lower (better) risk weight bands. The Group uses dominantly the external ratings of Standard & Poor's, Moody's and Fitch Ratings and DBRS only to a lesser extent. The majority of securitization positions with an eligible external or inferred external credit assessment are retained positions of the Group's synthetic securitizations or securitization positions held as investor. The risk concentration approach is applied to a few CRSA-securitization exposures that are small compared to the total amount of the Group's banking book securitization exposures. The scope of application of the supervisory formula approach and of the internal assessment approach is described below.

There is no securitization position for which the Group has applied the special provisions for originators of securitization transactions which include an investor's interest to be recognized by the originator pursuant to Section 245 et seqq. respectively Section 262 et seqq. SolvV.

### **Supervisory Formula Approach and Internal Assessment Approach**

The risk weight of securitization positions subject to the supervisory formula approach ("SFA") is determined based on a formula which takes as input the capital requirement of the securitized portfolio and the seniority of the securitization position in the waterfall, amongst others. When applying the SFA, the Group estimates the risk parameters PD and LGD for the assets included in the securitized portfolio, by using its internally developed rating systems approved for such assets. As in previous years also in 2011 the Group developed new rating systems for homogenous pools of assets to be applied to assets that have not been originated by the Group. The rating systems are based on historical default and loss information from comparable assets. The risk parameters PD and LGD are derived on risk pool level.

Less than a third of the total banking book securitization positions are subject to the SFA. This approach is predominantly used to rate positions backed by corporate loans, auto-related receivables and commercial real estate.

For unrated IRBA-securitization positions which are related to ABCP programs and which are not asset backed commercial paper, the risk weight is calculated based on the internal assessment approach ("IAA"). Apart from using this concept for regulatory purposes, the internal rating derived via IAA is used for expected loss and economic capital calculations and plays a significant role in the credit decision and monitoring process.

The Group has received approval from BaFin to apply the IAA to approximately 85% of its ABCP conduit securitization exposure.

Asset classes subject to IAA are governed by a specific and detailed set of rules per asset class. These asset class write-ups (“ACW”) have been established in cooperation between all relevant departments of the bank including Credit Risk Management, Risk Analytics and Instruments and the Front Office. They are reviewed and approved in a formal internal process, and subject to an at least annual review. As regards BaFin approved asset classes, the ACW require re-approval by the regulator in case of significant changes during the review process.

BaFin approval for IAA has been received for currently 13 different asset classes in both consumer and commercial assets. The stress factors are different per asset class and rating level; they are established based on criteria set by the best-suited external rating agency which forms the basis of the internal qualitative and quantitative rating analysis. The underlying cash flow models per asset class are also subject to the regular review process. For securitizations in those asset classes the Group utilizes external credit assessment institutions, namely Standard & Poor’s and Moody’s. With the exception of capital call lines, CDOs and student loans – FFELP (Federal Family Education Loan Program), where the Group utilizes Moody’s, the dominant rating agency is Standard & Poor’s.

### Calculation of Regulatory Capital Requirements for Trading Book Securitizations

The regulatory capital requirements for the market risk of trading book securitizations are determined based on a combination of internal models and regulatory standard approaches pursuant to Section 314 et seqq. SolvV.

The capital requirement for the general market risk of trading book securitization positions is determined as the sum of (i) the value-at-risk based capital requirement for general market risk and (ii) the stressed value-at-risk based capital requirement for general market risk.

The capital requirement for the specific market risk of trading book securitization positions depends on whether the positions are assigned to the regulatory correlation trading portfolio (“CTP”) or not.

For securitization positions that are not assigned to the CTP, the capital requirement for specific market risk is calculated based on the market risk standardized approach (“MRSA”). The MRSA risk weight for trading book securitization positions is generally calculated by using the same methodologies which apply to banking book securitization positions. The only difference relates to the use of the SFA for trading book securitization positions, where the capital requirement of the securitized portfolio is determined by making use of risk parameters (probability of default and loss given default) that are based on the incremental risk charge model. The MRSA based capital requirement for specific risk is determined as the higher of the capital requirements for all net long and all net short securitization positions outside of the CTP. The securitization positions included in the MRSA calculations for specific risk are additionally included in the value-at-risk and stressed value-at-risk calculations for specific risk.

Trading book securitizations subject to MRSA treatment include various asset classes differentiated by the respective underlying collateral types:

- Residential mortgage backed securities (“RMBS”);
- Commercial mortgage backed securities (“CMBS”);
- Collateralized loan obligations (“CLO”);
- Collateralized debt obligations (“CDO”); and
- Consumer asset backed securities (incl. credit cards, auto loans and leases, student loans, equipment loans and leases, dealer floorplan loans, etc).

They also include synthetic credit derivatives and commonly-traded indices based on the above listed instruments.

Conversely, the capital requirement for the specific market risk of securitization positions which are assigned to the CTP is determined as the sum of (i) the value-at-risk based capital requirement for specific risk, (ii) the stressed value-at-risk based capital requirement for specific risk and (iii) the capital requirement for specific risk as derived from the comprehensive risk measurement (“CRM”) model. The CRM based capital requirement is subject to a floor equal to 8 % of the higher of the specific risk capital requirements for all net long and all net short securitization positions under the MRSA.

The CTP includes all securitization positions and nth-to-default credit derivatives held for the purpose of trading correlation that satisfy the following requirements:

- all reference instruments are either single-name instruments, including single-name credit derivatives for which a liquid two-way market exists, or commonly-traded indices based on those reference entities;
- the positions are neither re-securitization positions, nor options on a securitization tranche, nor any other derivatives of securitization exposures that do not provide a pro-rata share in the proceeds of a securitization tranche; and
- the positions do not reference a claim on a special purpose entity, claims or contingent claims on real estate property or retail.

The CTP also comprises hedges to the securitization and nth-to-default positions in the portfolio, provided a liquid two-way market exists for the instrument or its underlying. Typical products assigned to the CTP are synthetic CDOs, nth-to-default credit default swaps (“CDS”), and index and single name CDS. For details on the CRM covering the regulatory CTP please also refer to Chapter 8 “Trading Market Risk”.

## Regulatory Good Practice Guidelines

The European Banking Federation, the Association for Financial Markets in Europe (formerly London Investment Banking Association), the European Savings Banks Group and the European Association of Public Banks and Funding Agencies published the “Industry good practice guidelines on Pillar 3 disclosure requirements for securitization” in December 2008, which were slightly revised in 2009/2010. The Group’s Pillar 3 disclosures are in compliance with the spirit of these guidelines as far as they have not been superseded by revised regulations in light of Basel 2.5.

## 7.5 Securitization Details

The amounts reported in the following tables provide details on the Group’s securitization exposures separately for the regulatory banking and trading book. The presentation of the banking book exposures is in line with last year’s disclosure but provides for further granularity following the introduction of the Basel 2.5 framework. Prior year end information is provided in the respective banking book tables to the extent comparable amounts had already been reported in the Group’s Pillar 3 Report 2010. Details on the Group’s trading book securitization positions subject to the Market Risk Standardized Approach (“MRSA”) have been added to this chapter resulting from the transition to Basel 2.5 in 2011. For details on the trading book securitization positions covered under the comprehensive risk measure please refer to Chapter 8 “Trading Market Risk”.

Overall, these amounts differ from, and are not directly comparable to, the amounts reported in the chapter “Special Purpose Entities” of the Management Report in the Group’s Financial Report 2011, in particular due to the differences in the respective consolidation principles discussed above between IFRS accounting and regulatory consolidation frameworks.

The Group is only exposed to credit or market risks related to the exposures securitized, as shown below, to the extent it has retained or purchased any of the related securitization positions and the risk of the retained or purchased positions depends on the relative position in the waterfall of the securitization transaction.

The following table in relation to the Group’s banking book exposures details the total outstanding exposure, i.e. the overall pool size, the Group has securitized in its capacity either as an originator or as a sponsor through traditional or synthetic securitization transactions split by exposure type. Within the originator column the table provides information on the underlying securitized asset pool which was either originated from the Group’s balance sheet or acquired from third parties. The amounts reported are either the carrying values as reported in the Group’s consolidated financial statements for synthetic securitizations or the current principal amount for traditional securitizations and off-balance-sheet exposures in synthetic transactions.

For sponsor relationships, the total outstanding exposures securitized reported in the tables below represent the principal notional amount of outstanding exposures of the entities issuing the securities and other receivables. The Group's exposure as of December 31, 2011, with regard to the € 131 billion total outstanding exposures securitized shown under the "Sponsor" columns including multi-seller transactions was € 21 billion. The remaining exposure is held by third parties. As of December 31, 2010, the Group's maximum exposure with regard to € 169 billion total outstanding exposures securitized resulting from sponsoring activities including multi-seller transactions amounted to € 30 billion. The decrease resulted primarily from a management decision to reduce the securitization book in the current weaker markets. In case of the exposure type consumer loans the reduction resulted predominantly from the reclassification of the Group's activity to investor as a consequence of a restructuring involving the Group's sponsored ABCP conduits. The outstanding exposures securitized reported in the tables are derived using information received from servicer reports of the third parties that the conduits have the relationships with.

Table 36 Outstanding Exposures Securitized by Exposure Type (Overall Pool Size) within the Banking Book

in € m.	Dec 31, 2011				Dec 31, 2010			
	Originator		Sponsor <sup>1</sup>		Originator		Sponsor <sup>1</sup>	
	Traditional	Synthetic	Traditional	Synthetic	Traditional	Synthetic	Traditional	Synthetic
Residential mortgages	14,018	4,124	18,131	–	18,450	4,608	15,907	–
Commercial mortgages	16,569	–	4,990	–	18,877	–	8,702	–
Credit card receivables	–	–	5,577	–	–	–	356	–
Leasing	–	–	6,390	–	–	–	10,538	–
Loans to corporates or SMEs (treated as corporates) <sup>2</sup>	6,657	27,105	26,698	1,045	9,136	35,929	27,388	1,864
Consumer loans	–	–	15,356	–	–	–	35,478	–
Trade receivables	–	–	–	–	–	–	2,037	–
Securitizations (re-securitizations)	7,830	–	1,022	–	7,739	–	283	–
Other assets	97	–	51,851	–	–	5,793 <sup>3</sup>	65,445	527
<b>Total outstanding exposures securitized<sup>4</sup></b>	<b>45,171</b>	<b>31,229</b>	<b>130,015</b>	<b>1,045</b>	<b>54,202</b>	<b>46,330</b>	<b>166,134</b>	<b>2,391</b>

<sup>1</sup> Included under "Sponsor" are € 18 billion exposures securitized, of which the Group originated € 10 billion, equally included under "Originator" as of December 31, 2011, which amounted to € 20 billion and € 14 billion as of December 31, 2010, respectively.

<sup>2</sup> SMEs are small- or medium-sized entities.

<sup>3</sup> Includes EAD for derivative exposures securitized.

<sup>4</sup> For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see Table 42 "Banking Book Securitization Positions Retained or Purchased by Risk Weight Band".

The table below provides the total outstanding exposure securitized in relation to securitization positions held in the Group's regulatory trading book separately for originator and sponsor activities and further broken out into traditional and synthetic transactions. Short synthetic single tranche CDOs have been reflected as originator positions for which the synthetic pool size was determined as the maximum of the synthetic pool sizes of all positions referencing a given pool. As already stated above, the outstanding exposures securitized as shown in the table below do not reflect the Group's risk as it includes exposures not retained by the Group, does not consider the different positioning in the waterfall of related positions and – most notably – does not reflect hedging other than that in identical tranches.

Table 37 Outstanding Exposures Securitized by Exposure Type (Overall Pool Size) within the Trading Book

in € m.	Dec 31, 2011			
	Originator		Sponsor <sup>1</sup>	
	Traditional	Synthetic	Traditional	Synthetic
Residential mortgages	13,591	–	4,586	–
Commercial mortgages	39,885	5,295	55,551	–
Credit card receivables	–	–	–	–
Leasing	–	–	–	–
Loans to corporates or SMEs (treated as corporates) <sup>2</sup>	2,063	189,539	4,126	–
Consumer loans	–	–	–	–
Trade receivables	–	–	–	–
Securitized (re-securitized)	9,663	–	–	–
Other assets	633	–	1,367	–
<b>Total outstanding exposures securitized<sup>3</sup></b>	<b>65,835</b>	<b>194,834</b>	<b>65,630</b>	<b>–</b>

<sup>1</sup> Included under "Sponsor" are € 63 billion exposures securitized, of which the Group originated € 28 billion, equally included under "Originator" as of December 31, 2011.

<sup>2</sup> SMEs are small- or medium-sized entities.

<sup>3</sup> For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the trading book see Table 47 "Trading Book Securitization Positions Retained or Purchased by Risk Weight Band subject to the Market Risk Standardized Approach (MRSA)". Includes securitized exposure as originator amounting to € 34 billion and as sponsor amounting to €10 billion already reflected in Table 36 "Outstanding Exposures Securitized by Exposure Type (Overall Pool Size) within the Banking Book".

The following table gives details for outstanding exposures for which the Group is an originator and holds securitization positions in the regulatory banking book, showing the amount of impaired or past due exposures securitized by exposure type and, hence, the credit quality of the underlying securitization asset pool. In case the Group is deemed originator of a synthetic securitization, impaired and past due exposures are determined in line with the Group's internal policies. Any exposure is reported as past due in case of being past due for 30 days or more if not already included as impaired. Also, for traditional securitizations, past due exposures are disclosed. The information was primarily derived from underlying positions' investor reports.

Separately, the table details losses the Group recognized in 2011 and 2010 for retained or purchased securitization positions as originator by exposure type. The losses are those reported in the consolidated statement of income. The amounts are the actual losses in the underlying asset pool to the extent that these losses are allocated to the retained or purchased securitization positions held by the Group after considering any eligible credit protection. This applies to both traditional and synthetic transactions.

**Table 38 Impaired and Past Due Exposures Securitized and Losses Recognized by Exposure Type (Overall Pool Size) as Originator**

in € m.	Dec 31, 2011	2011	Dec 31, 2010	2010
	Impaired/ past due <sup>1</sup>	Losses	Impaired/ past due <sup>1</sup>	Losses
Residential mortgages	4,831	28	7,299	41
Commercial mortgages	227	–	467	8
Credit card receivables	–	–	–	–
Leasing	–	–	–	–
Loans to corporates or SMEs (treated as corporates) <sup>2</sup>	1,191	35	641	118
Consumer loans	–	–	–	–
Trade receivables	–	–	–	–
Securitizations (re-securitizations)	361	5	358	42
Other assets	–	–	–	–
<b>Total impaired and past due exposures securitized and losses recognized<sup>3</sup></b>	<b>6,610</b>	<b>68</b>	<b>8,765</b>	<b>209</b>

<sup>1</sup> Includes the impaired and past due exposures in relation to the overall pool of multi-seller securitizations and therefore reflects more than the Group's own originated portion.

<sup>2</sup> SMEs are small- or medium-sized entities.

<sup>3</sup> For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see Table 42 "Banking Book Securitization Positions Retained or Purchased by Risk Weight Band".

In case of the Group being considered an originator, the total impaired or past due exposure securitized decreased by € 2.2 billion in 2011. The reduction resulted predominantly from the exposure type "Residential mortgages", partially offset by an increase in the exposure type "Loans to Corporate and SME". This increase resulted primarily from one synthetic securitization following a 2010 acquisition of European assets in relation to small and medium entities. Losses recorded by the Group in 2011 decreased across all exposure types to € 68 million compared to € 209 million in 2010.

The following table provides the amount of exposures by exposure type where there is a management intent to securitize them in the near future, separately for the banking and the trading book.

**Table 39 Outstanding Exposures Awaiting Securitization**

in € m.	Dec 31, 2011	
	Banking Book	Trading Book
Residential mortgages	–	–
Commercial mortgages	243	788
Credit card receivables	–	–
Leasing	–	–
Loans to corporates or SMEs (treated as corporates) <sup>1</sup>	1,154	–
Consumer loans	–	–
Trade receivables	–	–
Securitized (re-securitized)	–	–
Other assets	–	–
<b>Outstanding exposures awaiting securitization<sup>2</sup></b>	<b>1,397</b>	<b>788</b>

<sup>1</sup> SMEs are small- or medium-sized entities.

<sup>2</sup> Outstanding exposure does not include assets due for securitization without risk transfer i.e. those securitizations where the Group will keep all tranches.

The table below provides the amount of securitization positions retained or purchased by exposure type. Amounts reported for the banking book are the regulatory exposure values prior to the application of credit risk mitigation. The securitization position in the regulatory trading book are presented based on an exposure definition as laid out in Section 299 SolvV where identical or closely matched securities and derivatives are offset to a net position.

**Table 40 Securitization Positions Retained or Purchased by Exposure Type**

in € m.	Banking Book			Trading Book			Dec 31, 2010
	On-balance securitization positions	Off-balance, derivative and SFT securitization positions	Total	On-balance securitization positions	Off-balance, derivative and SFT securitization positions	Total	Banking Book
Residential mortgages	7,278	3,540	10,818	1,766	79	1,845	12,800
Commercial mortgages	4,245	1,155	5,400	1,832	1,010	2,842	7,193
Credit card receivables	613	671	1,284	101	32	133	428
Leasing	1,443	1,546	2,989	0	–	0	2,190
Loans to corporates or SMEs (treated as corporates) <sup>1</sup>	32,464	5,746	38,210	227	5,837	6,064	52,930
Consumer loans	2,650	3,484	6,134	60	–	60	9,145
Trade receivables	–	–	–	3	–	3	484
Securitized (re-securitized)	2,313	2,574	4,887	688	31	719	4,666
Other assets <sup>2</sup>	2,263	5,659	7,922	1,768	251	2,019	14,067
<b>Total securitization positions retained or purchased<sup>3</sup></b>	<b>53,269</b>	<b>24,375</b>	<b>77,644</b>	<b>6,445</b>	<b>7,240</b>	<b>13,685</b>	<b>103,903</b>

<sup>1</sup> SMEs are small- or medium-sized entities.

<sup>2</sup> Other assets in the banking book consists mainly of the exposure types wholesale inventory finance, future flow finance, and irrevocable capital commitments and included for December 31, 2010 also derivative counterparty risk exposures.

<sup>3</sup> For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activities see Table 42 "Banking Book Securitization Positions Retained or Purchased by Risk Weight Band" and Table 47 "Trading Book Securitization Positions Retained or Purchased by Risk Weight Band subject to the Market Risk Standardized Approach (MRSAs)".



On year on year comparison the banking book securitization positions retained or purchased decreased significantly nearly across all asset classes resulting from an active de-risking strategy pursued throughout the year 2011. Retained or purchased securitization positions have been reduced due to the fact that risk mitigation activities are to a lesser extent based on a securitization strategy outside the business unit LEMG which is especially visible in the asset class "other assets". This relates in particular to a de-recognition of a first loss credit default swap with underlying derivative counterparty risk exposures and to a reduced risk coverage the Group received under the terms and conditions of a 2010 acquisition in relation to loans to corporates or SMEs.

The following table provides a geographic breakdown of the securitization positions retained or purchased based on the country of domicile of the obligors of the exposures securitized, separately for banking and trading book exposures. The aforementioned termination and pool reduction of synthetic securitizations results in an exposure reduction across all regions but mainly in Europe by € 16 billion. In addition, exposures decreased by € 6 billion resulting from sponsoring activities in the region Americas, again largely resulting from the management decision to reduce the overall size of securitization positions.

For securitization exposure held in the regulatory trading book, the majority of exposure relates to assets in the region Americas, consisting predominately of synthetic single tranche CDOs.

**Table 41 Securitization Positions Retained or Purchased by Region**

in € m.	Dec 31, 2011		Dec 31, 2010
	Banking Book	Trading Book	Banking Book
Europe	35,956	2,526	51,536
Americas	38,605	10,149	46,665
Asia/Pacific	3,031	876	5,229
Other	52	134	473
<b>Total securitization positions retained or purchased<sup>1</sup></b>	<b>77,644</b>	<b>13,685</b>	<b>103,903</b>

<sup>1</sup> For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activities see Table 42 "Banking Book Securitization Positions Retained or Purchased by Risk Weight Band" and Table 47 "Trading Book Securitization Positions Retained or Purchased by Risk Weight Band subject to the Market Risk Standardized Approach (MRSA)".

### Banking Book Exposure

The table below shows the amount of securitization positions retained or purchased in the regulatory banking book based on regulatory exposure values, prior to application of credit risk mitigation, broken down by risk weight bands. In addition the resulting capital requirements by risk weight band are provided separately for the IRBA and the standardized approach.

Exposure reductions observable in the two lower risk weight bands (" $\leq 10\%$ " and " $> 10 \leq 20\%$ ") mainly relate to reduced or terminated synthetic securitizations. The increase in the exposure amount in the risk weight band " $> 20 \leq 50\%$ " reflects higher risk weights for re-securitization positions with the introduction of Basel 2.5, as applicable for year 2011 for the first time. Exposures subject to capital deduction came down as positions were either terminated, sold, restructured or externally rated BB- or better.

**Table 42 Banking Book Securitization Positions Retained or Purchased by Risk Weight Band**

in € m.	Dec 31, 2011			Dec 31, 2010		
	Exposure amount	Capital requirements IRBA <sup>1</sup>	Capital requirements standardized approach	Exposure amount	Capital requirements IRBA <sup>1</sup>	Capital requirements standardized approach
$\leq 10\%$	39,796	180	–	54,422	293	–
$> 10 \leq 20\%$	9,876	118	–	25,236	128	162
$> 20 \leq 50\%$	15,401	386	27	9,982	353	25
$> 50 \leq 100\%$	4,007	222	63	4,672	218	24
$> 100 \leq 650\%$	2,499	350	57	2,027	281	22
$> 650 < 1250\%$	179	86	10	171	86	–
1250 % / Deduction	5,886	2,894	589	7,393	3,883	675
<b>Total securitization positions retained or purchased</b>	<b>77,644</b>	<b>4,236</b>	<b>746</b>	<b>103,903</b>	<b>5,242</b>	<b>908</b>

<sup>1</sup> After considering value adjustments according to Section 253 (3) and 268 (2) SolV.

The below tables provide a breakdown of the Group's securitization positions by regulatory IRBA calculation method and further broken down into securitization and re-securitization positions. The largest portion of securitization exposures in the banking book is covered under the rating based approach where external ratings are used to derive the risk weight to be applied. For the remaining IRBA eligible banking book securitization positions, the Group uses the supervisory formula approach predominantly for its originator exposure and internal assessment approach for its ABCP sponsor activity.

**Table 43 Banking Book Securitization Positions Retained or Purchased by Risk Weight Bands subject to the IRBA-Rating Based Approach (RBA)**

in € m.	Dec 31, 2011			
	Exposure amount		Capital requirements, IRBA-RBA <sup>1</sup>	
	Securitization	Re-Securitization	Securitization	Re-Securitization
≤ 10 %	15,140	–	50	–
> 10 ≤ 20 %	4,548	–	88	–
> 20 ≤ 50 %	2,339	3,975	107	102
> 50 ≤ 100 %	1,650	162	179	2
> 100 ≤ 650 %	1,256	440	189	81
> 650 < 1250 %	35	119	18	62
1250 % / Deduction	3,313	1,791	1,808	933
<b>Total securitization positions retained or purchased</b>	<b>28,281</b>	<b>6,487</b>	<b>2,439</b>	<b>1,180</b>

<sup>1</sup> After considering value adjustments according to Section 253 (3) and 268 (2) SolvV.

**Table 44 Banking Book Securitization Positions Retained or Purchased by Risk Weight Band subject to the IRBA-Internal Assessment Approach (IAA)**

in € m.	Dec 31, 2011			
	Exposure amount		Capital requirements, IRBA-IAA <sup>1</sup>	
	Securitization	Re-Securitization	Securitization	Re-Securitization
≤ 10 %	5,752	–	35	–
> 10 ≤ 20 %	1,878	–	19	–
> 20 ≤ 50 %	2,785	1,828	78	54
> 50 ≤ 100 %	225	427	13	21
> 100 ≤ 650 %	237	276	45	30
> 650 < 1250 %	–	–	–	–
1250 % / Deduction	–	135	–	135
<b>Total securitization positions retained or purchased</b>	<b>10,877</b>	<b>2,666</b>	<b>190</b>	<b>240</b>

<sup>1</sup> After considering value adjustments according to Section 253 (3) and 268 (2) SolvV.

**Table 45 Banking Book Securitization Positions Retained or Purchased by Risk Weight Band subject to the IRBA-Supervisory Formular Approach (SFA)**

in € m.	Dec 31, 2011			
	Exposure amount		Capital requirements, IRBA-SFA <sup>1</sup>	
	Securitization	Re-Securitization	Securitization	Re-Securitization
≤ 10 %	18,904	-	95	-
> 10 ≤ 20 %	809	-	10	-
> 20 ≤ 50 %	2,813	-	46	-
> 50 ≤ 100 %	123	-	6	-
> 100 ≤ 650 %	16	-	6	-
> 650 < 1250 %	11	-	6	-
1250 % / Deduction	58	-	17	-
<b>Total securitization positions retained or purchased</b>	<b>22,734</b>	<b>-</b>	<b>186</b>	<b>-</b>

<sup>1</sup> After considering value adjustments according to Section 253 (3) and 268 (2) SolV.

The credit risk standardized approach is used for securitization positions where the underlying portfolio predominantly involves credit risk exposures, which would qualify for the credit risk standardized approach in case these exposures are directly held by the Group.

**Table 46 Banking Book Securitization Positions Retained or Purchased by Risk Weight Band subject to the Credit Risk Standardized Approach (CRSA)**

in € m.	Dec 31, 2011			
	Exposure amount		Capital requirements, CRSA	
	Securitization	Re-Securitization	Securitization	Re-Securitization
≤ 10 %	-	-	-	-
> 10 ≤ 20 %	2,641	-	-	-
> 20 ≤ 50 %	1,385	276	18	9
> 50 ≤ 100 %	1,420	-	63	-
> 100 ≤ 650 %	219	55	33	24
> 650 < 1250 %	-	14	-	10
1250 % / Deduction	589	-	589	-
<b>Total securitization positions retained or purchased</b>	<b>6,254</b>	<b>345</b>	<b>703</b>	<b>43</b>

## Trading Book Exposure

For securitization positions that are not assigned to the correlation trading portfolio, the capital requirement for the specific market risk is calculated based on the market risk standardized approach (MRSA). The MRSA risk weight for trading book securitization positions is generally calculated by using the same methodologies which apply to banking book securitization positions. More details on this approach are provided in Chapter 7.4 “Regulatory Securitization Framework” as well as in Chapter 8 “Trading Market Risk”.

**Table 47 Trading Book Securitization Positions Retained or Purchased by Risk Weight Band subject to the Market Risk Standardized Approach (MRSA)**

in € m.	Dec 31, 2011			
	Exposure amount		Capital requirements, MRSA	
	Securitization	Re-Securitization	Securitization	Re-Securitization
≤ 10 %	6,292	–	36	–
> 10 ≤ 20 %	1,541	–	20	–
> 20 ≤ 50 %	1,895	149	44	5
> 50 ≤ 100 %	733	29	48	2
> 100 ≤ 650 %	512	198	123	54
> 650 < 1250 %	61	32	34	19
1250 % / Deduction	1,571	672	1,571	672
<b>Total securitization positions retained or purchased</b>	<b>12,605</b>	<b>1,080</b>	<b>1,876</b>	<b>752</b>

## Re-securitization Positions

The following table provides the amount of re-securitization positions retained or purchased before and after hedging and insurance. Whilst no hedging and insurances are applied for banking book securitization positions the trading book exposure is reduced by more than 65 % as a result of hedging being recognized according to section 299 SolV.

**Table 48 Re-Securitization Positions Retained or Purchased before and after hedging and insurances**

in € m.	Dec 31, 2011			
	Banking Book		Trading Book	
	Exposure amount		Exposure amount	
	Before hedging/insurances	After hedging/insurances	Before hedging/insurances	After hedging/insurances
<b>Re-Securitization Positions</b>	<b>9,498</b>	<b>9,498</b>	<b>3,340</b>	<b>1,080</b>

Risk mitigations in form of financial guarantees have not been applied to the Group's re-securitization positions neither in the banking nor in the trading book.

## Securitization Activities

The following tables detail securitization activities undertaken during 2011 and 2010, separately for the Group's banking and trading book. The majority of the exposures relates to renewed sponsor activity in respect of already existing transactions. The tables show securitized exposure (i.e. the underlying pools) separately for originator and sponsor activities, broken down by exposure type and into traditional and synthetic transactions.

Securitization activity within the year 2011 was predominantly in loans to corporates or SME and there as a result of synthetic transactions being executed by the Loan Exposure Management Group as well as one new securitization transaction within the Group's Global Transaction Bank.

The significantly reduced volumes for exposures securitized in the banking book reflect the overall reduced activities in a weaker market environment.

**Table 49 Securitization Activity – Total Outstanding Exposures Securitized by Exposure Type within the Banking Book**

	Originator			Sponsor <sup>1</sup>	
	Dec 31, 2011		2011	Dec 31, 2011	
in € m.	Traditional	Synthetic	Realized gains (losses) from sales/ liquidations	Traditional	Synthetic
Residential mortgages	-	-	-	1,339	-
Commercial mortgages	968	-	27	1,650	-
Credit card receivables	-	-	-	173	-
Leasing	-	-	-	751	-
Loans to corporates or SMEs (treated as corporates) <sup>2</sup>	-	2,996	-	209	-
Consumer loans	-	-	-	214	-
Trade receivables	-	-	-	-	-
Securitized (re-securitized)	-	-	-	-	-
Other assets	-	-	-	299	-
<b>Total Outstanding Exposures Securitized<sup>3</sup></b>	<b>968</b>	<b>2,996</b>	<b>27</b>	<b>4,635</b>	<b>-</b>

<sup>1</sup> Included under "Sponsor" were € 1.6 billion exposures securitized, of which the Group originated € 610 million, equally included under "Originator".

<sup>2</sup> SMEs are small- or medium-sized entities.

<sup>3</sup> For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see Table 42 "Banking Book Securitization Positions Retained or Purchased by Risk Weight Band".

	Originator			Sponsor	
	Dec 31, 2010		2010	Dec 31, 2010	
in € m.	Traditional	Synthetic	Realized gains (losses) from sales/ liquidations	Traditional	Synthetic
Residential mortgages	-	-	-	-	-
Commercial mortgages	204	-	-	-	-
Credit card receivables	-	-	-	356	-
Leasing	-	-	-	2,626	-
Loans to corporates or SMEs (treated as corporates) <sup>1</sup>	-	16,032	-	-	-
Consumer loans	-	-	-	16,943	-
Trade receivables	-	-	-	819	-
Securitized (re-securitized)	-	-	-	-	-
Other assets	-	-	-	4,696	-
<b>Total Outstanding Exposures Securitized<sup>2</sup></b>	<b>204</b>	<b>16,032</b>	<b>-</b>	<b>25,440</b>	<b>-</b>

<sup>1</sup> SMEs are small- or medium-sized entities.

<sup>2</sup> For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the banking book see Table 42 "Banking Book Securitization Positions Retained or Purchased by Risk Weight Band".

Table 50 Securitization Activity – Total Outstanding Exposures Securitized by Exposure Type within the Trading Book

	Originator		Realized gains (losses) from sales/ liquidations	Sponsor <sup>1</sup>	
	Dec 31, 2011	2011		Dec 31, 2011	
in € m.	Traditional	Synthetic		Traditional	Synthetic
Residential mortgages	-	-	-	2,247	-
Commercial mortgages	3,193	-	95	4,088	-
Credit card receivables	-	-	-	-	-
Leasing	-	-	-	-	-
Loans to corporates or SMEs (treated as corporates) <sup>2</sup>	-	2,660	-	-	-
Consumer loans	-	-	-	-	-
Trade receivables	-	-	-	-	-
Securitizations (re-securitizations)	-	-	-	-	-
Other assets	-	-	-	-	-
<b>Total Outstanding Exposures Securitized<sup>3</sup></b>	<b>3,193</b>	<b>2,660</b>	<b>95</b>	<b>6,335</b>	<b>-</b>

<sup>1</sup> Included under "Sponsor" are € 4.1 billion exposures securitized, of which the Group originated € 1.7 billion, equally included under "Originator".

<sup>2</sup> SMEs are small- or medium-sized entities.

<sup>3</sup> For a regulatory assessment of the Group's exposure to credit risk in relation to its securitization activity in the trading book see Table 47 "Trading Book Securitization Positions Retained or Purchased by Risk Weight Band subject to the Market Risk Standardized Approach (MRSA)".

## 8. Trading Market Risk

### Market Risk

The vast majority of the Group's businesses are subject to market risk, defined as the potential for change in the market value of the Group's trading and investing positions. Risk can arise from adverse 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.

Market risk arising from Postbank has been included in the Group's reporting since 2010. Postbank conducts its own day-to-day risk management. The Group has a detailed understanding of Postbank's activities and receives information regarding the types and amounts of market risks.

The primary objective of Market Risk Management, a part of the Group's independent Risk function, is to ensure that the business units optimize the risk-reward relationship and do not expose the Group to unacceptable losses outside of its risk appetite. To achieve this objective, Market Risk Management works closely together with risk takers ("the business units") and other control and support groups.

The Group differentiates between three substantially different types of market risk:

- Trading market risk arises primarily through the market-making activities of the Corporate & Investment Bank Group 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.
- Nontrading market risk arises in various forms. Equity risk arises primarily from non-consolidated strategic investments, alternative asset investments and equity compensation. Interest rate risk stems from the Group's nontrading asset and liability positions. Structural foreign exchange risk exposure arises from capital and retained earnings in non euro currencies in certain subsidiaries, and represents the bulk of foreign exchange risk in the Group's nontrading portfolio. Other nontrading market risk elements are risks arising from asset management and fund related activities as well as model risks in Private Business Clients ("PBC"), Global Transaction Banking ("GTB") and Private Wealth Management ("PWM"), which are derived by stressing assumptions of client behavior in combination with interest rate movements.

### 8.1 Trading Market Risk Management Framework

#### Trading Market Risk Management Framework at Deutsche Bank Group (excluding Postbank)

The Group's primary instrument to manage trading market risk is the limit setting process. The Group's Management Board supported by Market Risk Management, sets Group-wide value-at-risk and economic capital limits for market risk in the trading book. Market Risk Management sub-allocates this overall limit to the Group's divisions and individual business units within Corporate & Investment Bank Group division (e.g. Global Rates, Equity, etc.) based on anticipated business plans and risk appetite. Within the individual business units, the business heads establish business limits, by sub-allocating the overall limit down to individual portfolios or geographical regions.



In practice, Market Risk Management sets key limits, which tend to be global in nature, necessary to capture an exposure to a particular risk factor. Business limits are specific to various factors, including a particular geographical region or specific portfolio.

Value-at-risk and economic capital limits are used for managing all types of market risk at an overall portfolio level. As an additional and complementary tool for managing certain portfolios or risk types, Market Risk Management sets sensitivity and concentration/liquidity limits.

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. Where limits are exceeded, Market Risk Management is responsible for identifying and escalating those excesses, on a timely basis. The Management Board receives daily market risk reports on value-at-risk and limit usage and economic capital.

To manage the exposures inside the limits, the business units apply several risk mitigating measures, most notably the use of:

- **Portfolio management:** Risk diversification arises in portfolios which consist of a variety of positions. Since some investments are likely to rise in value when others decline, diversification can help to lower the overall level of risk profile of a portfolio.
- **Hedging:** Hedging involves taking positions in related financial assets, including derivative products, such as futures, swaps and options. Hedging activities may not always provide effective mitigation against losses due to differences in the terms, specific characteristics or other basis risks that may exist between the hedge instrument and the exposure being hedged.

### Trading Market Risk Management Framework at Postbank

Postbank's trading market risk is managed centrally by the Financial Markets division, based on defined risk limits. Aggregate limits are set by the Management Board of Postbank and allocated by the Market Risk Committee to the individual operating business units as sub-limits. The allocation mechanism for market risk limits at Postbank is similar to the Group's economic capital approach. The risk economic capital limits allocated to specific business activities define the level of market risk that is reasonable and desirable for Postbank from an earnings perspective.

Market risk at Postbank is monitored on a daily basis using a system of limits based on value-at-risk. In addition, Postbank's Market Risk Committee has defined sensitivity limits for the trading and banking book as well as for key sub-portfolios.

## 8.2 Quantitative Risk Management Tools

### Value-at-Risk at Deutsche Bank Group (excluding Postbank)

Value-at-risk is a quantitative measure of the potential loss (in value) of trading positions due to market movements that will not be exceeded in a defined period of time and with a defined confidence level.

The Group's value-at-risk for the trading businesses is based on its own internal value-at-risk model. In October 1998, the German Banking Supervisory Authority (now the BaFin) approved the Group's internal value-at-risk model for calculating the regulatory market risk capital for the general and specific market risks. Since then the model has been periodically refined and approval has been maintained.

The Group calculates value-at-risk using a 99% confidence level and a one day holding period. This means the Group estimates there is a 1 in 100 chance that a mark-to-market loss from the Group's trading positions will be at least as large as the reported value-at-risk. For regulatory reporting, the holding period is ten days.

The Group uses one-year historical market data to calculate value-at-risk. The calculation employs a Monte Carlo Simulation technique, and the Group assumes that changes in risk factors follow a well-defined distribution, e.g. normal, lognormal, or non-normal (T, skew-T, Skew-Normal). To determine its aggregated value-at-risk, the Group uses observed correlations between the risk factors during this one-year period.

The Group's value-at-risk model is designed to take into account the following risk factors: interest rates, credit spreads, equity prices, foreign exchange rates and commodity prices, as well as their implied volatilities and common basis risk. The model incorporates both linear and, especially for derivatives, nonlinear effects of the risk factors on the portfolio value.

The value-at-risk measure enables the Group to apply a constant and uniform measure across all of its trading 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 the Group's market risk both over time and against the Group's daily trading results.

When using value-at-risk 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 value-at-risk to understate risk (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.
- Value-at-risk does not indicate the potential loss beyond the 99th quantile.
- Intra-day risk is not captured.
- There may be risks in the trading book that are partially or not captured by the value-at-risk model.

The Group continually analyzes potential weaknesses of its value-at-risk model using statistical techniques, such as back-testing, and also relies on risk management experience. The Group compares the hypothetical daily profits and losses under the buy-and-hold assumption (in accordance with German regulatory requirements) with the estimates from the Group’s value-at-risk model.

The Global Back-testing Committee with participation from Market Risk Management, Market Risk Operations, Risk Analytics and Instruments, and Finance meets on a regular basis to review back-testing results of the Group as a whole and of individual businesses. The committee analyzes performance fluctuations and assesses the predictive power of the Group’s value-at-risk model, which allows the Group to improve and adjust the risk estimation process accordingly.

The Group is committed to the ongoing development of its proprietary risk models and allocates substantial resources to reviewing and improving them. During 2011, improvements were made to the value-at-risk calculation, including:

- Index-to-constituent basis risk for credit default swaps (CDS);
- Event risk for equities; and
- Volatility skew for FX and commodities.

The Group has further developed and improved its process of systematically capturing and evaluating risks currently not captured in its value-at-risk model.

Market Risk Management validates front office models to assist in the risk management of positions. Front office quantitative risk models are subject to model risk. Market Risk Management has developed a model review process to understand, review and improve quantitative models. Market Risk Management assesses the accuracy and transparency of model risk in the quantitative pricing models used for market risk activities, including the valuation of instrument types.

The model approval and review process is performed on an annual basis and involves:

- Ensuring newly designed or recently enhanced models align to design objectives and fit for intended business purpose;
- Verifying the mathematical integrity of the models and their implementation;
- Reviewing performance of all existing models, discussing any changes in model use;
- Reviewing results of ongoing calibration processes and testing, and approval of any proposed changes to the calibration process, instruments or parameter value ranges;
- Discussing inconsistent use of models for similar/same products across businesses and establish consistent measures; and
- Establishing strict governance around model controls and escalation to senior management of materially relevant model risk related issues in a timely fashion.

### New Basel 2.5 Regulatory Trading Market Risk Requirements

In December 2011 the Group received model approvals, from the BaFin, for the stressed value-at-risk, incremental risk charge and comprehensive risk measure models. These are additional methods the Group uses to measure market risk exposures.

- **Stressed Value-at-Risk:** calculates a stressed value-at-risk measure based on a continuous 1 year period of significant market stress.
- **Incremental Risk Charge (“IRC”):** captures default and migration risks in addition to the risks already captured in value-at-risk for credit-sensitive positions in the trading book.
- **Comprehensive Risk Measure (“CRM”):** captures incremental risk for the credit correlation trading portfolio calculated using an internal model subject to qualitative minimum requirements as well as stress testing requirements. The CRM must be calculated weekly and is determined as the higher of the latest weekly CRM charge from the model, the twelve weeks average CRM charge, and the market risk standardized approach charge for the credit correlation portfolio, the so-called CRM Floor.
- **Market Risk Standardized Approach (“MRSA”):** calculates regulatory capital for securitizations and nth-to-default credit derivatives.

Stressed value-at-risk, incremental risk charge and the comprehensive risk measure are calculated for all relevant portfolios. The results from the models are used in the day-to-day risk management of the bank, as well as for defining regulatory capital.

### Stressed Value-at-Risk

The Group calculates a stressed value-at-risk measure using a 99% confidence level and a holding period of one day. For regulatory purposes, the holding period is ten days. The Group’s calculation of stressed value-at-risk 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 from a period of significant financial stress (i.e. characterized by high volatilities) is used as an input for the Monte Carlo Simulation.

### Incremental Risk Charge (“IRC”)

The incremental risk charge is based on the Group’s own internal model and is intended to complement the value-at-risk modeling framework. It represents an estimate of the default and migration risks of unsecured credit products over a one-year capital horizon at a 99.9 % confidence level, taking into account the liquidity horizons of individual positions or sets of positions. The Group uses a Monte Carlo Simulation for calculating incremental risk charge as the 99.9% quantile of the portfolio loss distribution over a one-year horizon 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.

The Group calculates the incremental risk charge on a weekly basis. The charge is determined as the higher of the most recent 12 week average of incremental risk charge and the most recent incremental risk charge. The market and position data are collected from front office systems and are subject to strict quality control. The incremental risk charge figures are closely monitored and play a significant role in the management of the portfolios covered by the incremental risk charge calculation. Additionally, the incremental risk charge provides information on the effectiveness of the hedging positions which is reviewed by the risk managers.

The contributory incremental risk charge of individual positions, which is calculated by allocation, provides the basis for identifying risk concentrations in the portfolio and designing strategies to reduce the overall portfolio risk.

The Group uses its credit portfolio model, a core piece of the Group’s economic capital methodology, to calculate the incremental risk charge. Important parameters for the incremental risk charge calculation are exposures, recovery rates and default probabilities, ratings migrations, maturity, and liquidity horizons of individual positions.

Liquidity horizon settings are set to the time required to sell the position or to hedge all material relevant price risks in a stressed market. Liquidity horizons reflect the Group’s actual practice and experience during periods of systematic and idiosyncratic stresses. The Group has defined the sets of positions used for applying liquidity horizons in a way that meaningfully reflects the differences in liquidity for each set. Risk managers who specialize in each product area have made liquidity determinations based on market conditions for each area, both currently and under periods of stress.

To quantify a loss due to rating migration, a revaluation of a position is performed under the new rating. The probability of joint rating downgrades and defaults is determined by the migration and rating correlations of the incremental risk charge model. These correlations are specified through systematic factors that represent geographical regions and industries. The simulation process incorporates a rollover strategy that is based on the assumption of a constant level of risk. This assumption implies that positions that have experienced default or rating migration over their liquidity horizon are re-balanced at the end of their liquidity horizon to attain the initial level of risk. Correlations between positions with different liquidity horizons are implicitly specified by the dependence structure of the underlying systematic and idiosyncratic risk factors, ensuring that portfolio concentrations are identified across liquidity horizons. In particular, differences between liquidity horizons and maturities of hedges and hedged positions are recognized.

Direct validation of the incremental risk charge through back-testing methods is not possible. The incremental risk charge is subject to validation principles such as the evaluation of conceptual soundness, ongoing monitoring, process verification and benchmarking and outcome analysis. The validation of the incremental risk charge methodology is embedded in the validation process for the Group's credit portfolio model, with particular focus on the incremental risk charge specific aspects. The incremental risk charge model validation relies more on indirect methods including stress tests and sensitivity analyses. The incremental risk charge relevant parameters are included in the annual validation cycle established in the current regulatory framework. The incremental risk charge is part of the quarterly Group Wide Stress Test (GWST) using the stress testing functionality within the Group's credit engine. Stressed incremental risk charge figures are reported on group level and submitted to the Stress Testing Oversight Committee (STOC) and Cross Risk Review Committee (CRRC).

### Comprehensive Risk Measure ("CRM")

The comprehensive risk measure for the correlation trading portfolio is based on the Group's own internal model. The Group calculates the comprehensive risk measure based on a Monte Carlo Simulation technique to a 99.9% confidence level and a capital horizon of 1 year. The calculation also employs certain distribution assumptions for the underlying risk factors used. The Group's comprehensive risk measure model is applied to the eligible correlation trading positions and their hedges, and is designed to take into account the following risk factors: interest rates, credit spreads, recovery rates, counterparty defaults, foreign exchange rates and base correlations, index-to-constituent and base correlation basis risks. Typical products are collateralized debt obligations, nth-to-default credit default swaps ("CDS"), and index- and single-name CDS. The model incorporates concentrations of the portfolio and nonlinear effects via a full revaluation approach.

Comprehensive risk measure is calculated on a weekly basis. It is determined as the higher of the latest weekly comprehensive risk measure charge from the model, the 12 week average comprehensive risk measure charge, and 8% of the standardized approach charge for the credit correlation portfolio (comprehensive risk measure floor).

The market and position data are collected from front office systems and are subject to strict quality control. The comprehensive risk measure figures are closely monitored and play a significant role in the management of the correlation trading portfolio. The Group uses historical market data to estimate the risk drivers to the comprehensive risk measure, with an equally-weighted trading day history of up to 3 years, depending on the risk driver.

Liquidity horizon settings are set to the time required to sell the position or to hedge all material relevant price risks in a stressed market. Liquidity horizons reflect the Group's actual practice and experience during periods of systematic and idiosyncratic stresses.

The Group has defined the sets of positions used for applying liquidity horizons in a way that meaningfully reflects the differences in liquidity for each set. Risk managers who specialize in each product area have made liquidity determinations based on market conditions for each area, both currently and under periods of stress.

The Group continually analyzes the potential weaknesses of its comprehensive risk measure model using statistical techniques such as a monthly back-testing process and a quarterly re-calibration of market data. The Group also relies on risk management experience and expert opinion. As additional validation, a series of stress tests have been defined on the correlation trading portfolio where the shock sizes link into historical distressed market conditions.

### Market Risk Standardized Approach (MRSA)

The specific market risk standardized approach is used to determine the regulatory capital charge for the non-correlation trading portfolio securitization products and nth-to-default credit swaps. Market Risk Management monitors exposures and addresses risk issues and concentrations.

Longevity risk is the risk of adverse changes in life expectancies resulting in a loss in value on longevity linked policies and transactions. Regulatory capital charge for longevity risk is determined using the Market Risk Standardized Approach as set out in SolvV regulations. For risk management purposes, stress testing and economic capital allocations are also used to monitor and manage longevity risk.

### Value-at-Risk at Postbank

Postbank also uses the value-at-risk concept to quantify and monitor the market risk it assumes. Value-at-risk is calculated using a Monte Carlo Simulation. The risk factors taken into account in the value-at-risk include interest rates, equity prices, foreign exchange rates, and volatilities, along with risks arising from changes in credit spreads. Correlation effects between the risk factors are derived from equally-weighted historical data.

Postbank's trading book value-at-risk is currently not consolidated into the value-at-risk of the remaining Group. However, it is shown separately in the internal value-at-risk report for the Group.

Postbank also performs scenario analyses and stress tests in addition to the value-at-risk calculations. The assumptions underlying the stress tests are reviewed and validated on an ongoing basis.

### Economic Capital for Market Risk

Economic capital for market risk measures the amount of capital needed to absorb very severe, unexpected losses arising from the Group's exposures over the period of one year. "Very severe" in this context means that economic capital is set at a level to cover with a probability of 99.98 % of the aggregated unexpected losses within one year. The market risks from Postbank have been included in the Group's economic capital results.

The Group calculates economic capital using stress tests and scenario analyses. The stress tests are derived from historically observed severe market shocks. The resulting losses from these stress scenarios are then aggregated using correlations observed during periods of market crises, to reflect the increase in correlations which occurs during severe downturns.

Where only limited historical data is available or where market developments lead the Group to believe that historical data may be a poor indicator of possible future market scenarios, the stress tests are augmented by expert assessments.

The calculation of economic capital for market risk from the trading units is performed weekly. The model incorporates the following risk factors: interest rates, credit spreads, equity prices, foreign exchange rates and commodity prices. Volatility, credit correlation and common basis risks are also captured.

The Group also continuously assesses and refines its stress tests in an effort to ensure they capture material risks as well as reflect possible extreme market moves. Additionally, risk managers use their expert judgment to define worst case scenarios based upon the knowledge of past extreme market moves. It is possible however, for the Group's market risk positions to lose more value than the Group's economic capital estimates since all downside scenarios cannot be predicted and simulated.

## 8.3 Trading Market Risk Details

### Value-at-Risk of Trading Units of The Group's Corporate & Investment Bank Group Division (excluding Postbank)

The following table shows the value-at-risk of the trading units of the Corporate & Investment Bank Group Division calculated with a 99 % confidence level and a one-day holding period. The Group's trading market risk outside of these units is immaterial.

Table 51 Value-at-Risk of CIB Trading Units by Risk Type

in € m.	Dec 31, 2011	Dec 31, 2010
Interest rate risk	53.8	77.4
Equity price risk	13.6	21.3
Foreign exchange risk	25.7	29.0
Commodity price risk	21.0	13.3
Diversification effect	(64.1)	(70.1)
<b>Total value-at-risk of trading units</b>	<b>50.0</b>	<b>70.9</b>

"Diversification effect" reflects the fact that the total value-at-risk on a given day will be lower than the sum of the value-at-risk relating to the individual risk classes. Simply adding the value-at-risk figures of the individual risk classes to arrive at an aggregate value-at-risk would imply the assumption that the losses in all risk categories occur simultaneously.

The following table shows the average, maximum, and minimum value-at-risk (with a 99 % confidence level and a one-day holding period) of the trading units of the Corporate & Investment Bank Group Division for the periods specified.

Table 52 Value-at-Risk of CIB Trading Units in the Reporting Period

in € m.	Total		Diversification effect		Interest rate risk		Equity price risk		Foreign exchange risk		Commodity price risk	
	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010	2011	2010
Average	71.8	95.6	(66.3)	(48.6)	70.8	86.8	20.5	21.9	32.5	22.9	14.2	12.7
Maximum	94.3	126.4	(88.6)	(88.5)	109.0	113.0	37.6	33.6	64.9	46.4	24.3	21.2
Minimum	44.9	67.5	(41.9)	(26.4)	45.6	65.8	12.7	13.6	14.3	10.8	7.0	6.2

The € 23.8 million or 25 % decrease in average value-at-risk observed in 2011 compared to the prior year was driven primarily by broad risk reduction, particularly in interest rate and credit asset classes.

### New Basel 2.5 Regulatory Trading Market Risk Measures

As discussed under "New Basel 2.5 Regulatory Trading Market Risk Requirements", the following table shows the stressed Value-at-Risk (with a 99 % confidence level and a one-day holding period) of the trading units of the Corporate & Investment Bank Group Division.



**Table 53 Stressed Value-at-Risk of CIB Trading Units by Risk Type**

in € m.	Dec 31, 2011
Interest rate risk	117.3
Equity price risk	23.0
Foreign exchange risk	51.8
Commodity price risk	34.2
Diversification effect	(114.5)
<b>Total stressed value-at-risk of trading units</b>	<b>111.7</b>

The following table shows the average, maximum, and minimum stressed value-at-risk (with a 99% confidence level and a one-day holding period) of the trading units of the Corporate & Investment Bank Group Division for the periods specified.

**Table 54 Average, Maximum and Minimum Stressed Value-at-Risk of CIB Trading Units by Risk Type**

in € m.	2011		
	Average <sup>1</sup>	Maximum <sup>1</sup>	Minimum <sup>1</sup>
Interest rate risk	130.8	163.5	106.2
Equity price risk	22.5	64.7	15.2
Foreign exchange risk	51.3	105.4	23.0
Commodity price risk	29.2	35.8	19.6
Diversification effect	(109.4)	(152.3)	(77.8)
<b>Total stressed value-at-risk of trading units</b>	<b>124.4</b>	<b>169.5</b>	<b>103.8</b>

<sup>1</sup> Average, Maximum and Minimum have been calculated for the period from October 1, 2011 to December 31, 2011.

The following table shows the incremental risk charge (with a 99.9% confidence level and one-year capital horizon) of the trading units of the Corporate & Investment Bank Group Division.

**Table 55 Incremental Risk Charge of Trading Units**

in € m.	Dec 31, 2011
Global Finance and Foreign Exchange	83.8
Global Rates	292.7
Global Credit Trading	222.0
Emerging Markets – Debt	140.9
Other	(1.4)
<b>Total incremental risk charge of trading units</b>	<b>738.0</b>

The following table shows the average, maximum, and minimum of the incremental risk charge (with a 99.9% confidence level and one-year capital horizon) of the trading units of the Corporate & Investment Bank Group Division.

**Table 56 Average, Maximum and Minimum Incremental Risk Charge of Trading Units**

in € m.	Weighted average liquidity horizon in month	2011		
		Average <sup>1</sup>	Maximum <sup>1</sup>	Minimum <sup>1</sup>
Global Finance and Foreign Exchange	6.0	48.0	83.8	6.5
Global Rates	6.0	318.6	358.4	284.7
Global Credit Trading	6.0	302.7	423.3	221.9
Emerging Markets – Debt	6.0	90.0	140.9	23.9
Other	6.0	(1.3)	2.2	(5.5)
<b>Total incremental risk charge of trading units</b>	<b>6.0</b>	<b>758.0</b>	<b>846.3</b>	<b>697.1</b>

<sup>1</sup> Average, Maximum and Minimum have been calculated for the period from October 1, 2011 to December 31, 2011.

The following table shows the comprehensive risk measure (with a 99.9% confidence level and one-year capital horizon) of the trading units of the Corporate & Investment Bank Group Division.

**Table 57 Comprehensive Risk Measure of CIB Trading Units**

in € m.	Dec 31, 2011
Correlation trading	855.7

The following table shows the maximum, minimum and average of the comprehensive risk measure (with a 99.9% confidence level and one-year capital horizon) of the trading units of the Corporate & Investment Bank Group Division.

**Table 58 Average, Maximum and Minimum Comprehensive Risk Measure of CIB Trading Units**

in € m.	2011			
	Weighted average liquidity horizon in month	Average <sup>1</sup>	Maximum <sup>1</sup>	Minimum <sup>1</sup>
Correlation trading	6.0	937.9	1,007.5	848.3

<sup>1</sup> Average, Maximum and Minimum have been calculated for the period from October 1, 2011 to December 31, 2011.

As at December 31, 2011, the securitization positions using the market risk standardized approach generated risk weighted assets of € 5.0 billion and capital deduction items of € 2.2 billion.

As at December 31, 2011, the capital charge for longevity risk was € 32.1 million corresponding to risk weighted assets of € 400.9 million.

### Value-at-Risk at Postbank

The following table shows the value-at-risk of Postbank's trading book (calculated with a 99% confidence level and a one-day holding period).

**Table 59 Value-at-Risk of Postbank**

in € m.	Dec 31, 2011	Dec 31, 2010
Interest rate risk	3.9	1.8
Equity price risk	-	0.2
Foreign exchange risk	0.0	0.0
Commodity price risk	-	-
Diversification effect	(0.0)	(0.0)
<b>Total value-at-risk of Postbank's trading book</b>	<b>3.9</b>	<b>2.0</b>

The increase in Postbank's value-at-risk from € 2.0 million at year end 2010 to € 3.9 million as of December 31, 2011, is largely due to the increase of a long position in the short end of the yield curve within the repo book. "Diversification effect" reflects the fact that the total value-at-risk on a given day will be lower than the sum of the value-at-risk relating to the individual risk classes. Simply adding the value-at-risk figures of the individual risk classes to arrive at an aggregate value-at-risk would imply the assumption that the losses in all risk categories occur simultaneously.

The following table shows the average, maximum, and minimum value-at-risk (with a 99% confidence level and a one-day holding period) of the trading book of Postbank.

**Table 60 Average, Maximum and Minimum Value-at-Risk of Postbank**

in € m.	Total	Diversification effect	Interest rate risk	Equity price risk	Foreign exchange risk	Commodity price risk
	2011	2011	2011	2011	2011	2011
Average <sup>1</sup>	3.2	(0.2)	3.2	0.1	0.1	-
Maximum <sup>1</sup>	8.2	(0.0)	8.1	0.4	0.5	-
Minimum <sup>1</sup>	1.1	(0.8)	1.1	0.0	0.0	-

<sup>1</sup> In 2010 the average, maximum and minimum value-at-risk had no material variance for the period since consolidation of Postbank.

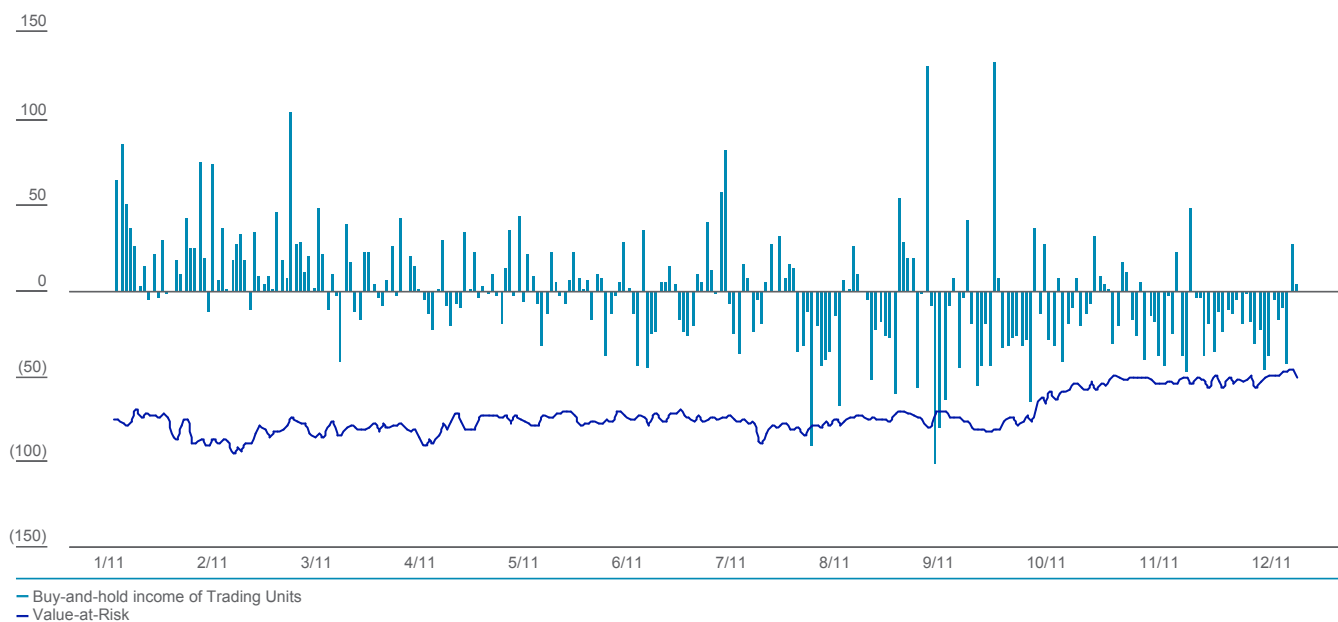
### Regulatory Back-testing of Trading Market Risk

Back-testing is a procedure used to verify the predictive power of the value-at-risk calculations involving the comparison of hypothetical daily profits and losses under the buy-and-hold assumption with the estimates from the value-at-risk model. An outlier is a hypothetical buy-and-hold trading loss that exceeds the Group's value-at-risk estimate. On average, the Group would expect a 99 percent confidence level to give rise to two to three outliers in any one year. In the Group's regulatory back-testing in 2011, the Group observed three global outliers compared to two in 2010. The outliers occurred between August and September following increased market volatility. The Group continues to believe that its value-at-risk model will remain an appropriate measure for the Group's trading market risk under normal market conditions.

The following graph shows the daily buy-and-hold trading results in comparison to the value-at-risk as of the close of the previous business day for the trading days of the reporting period. Figures are shown in millions of euro and exclude contributions from Postbank's trading book which is calculated on a stand-alone basis.

Buy-and-hold income of Trading Units and Value -at-Risk in 2011

in € m.

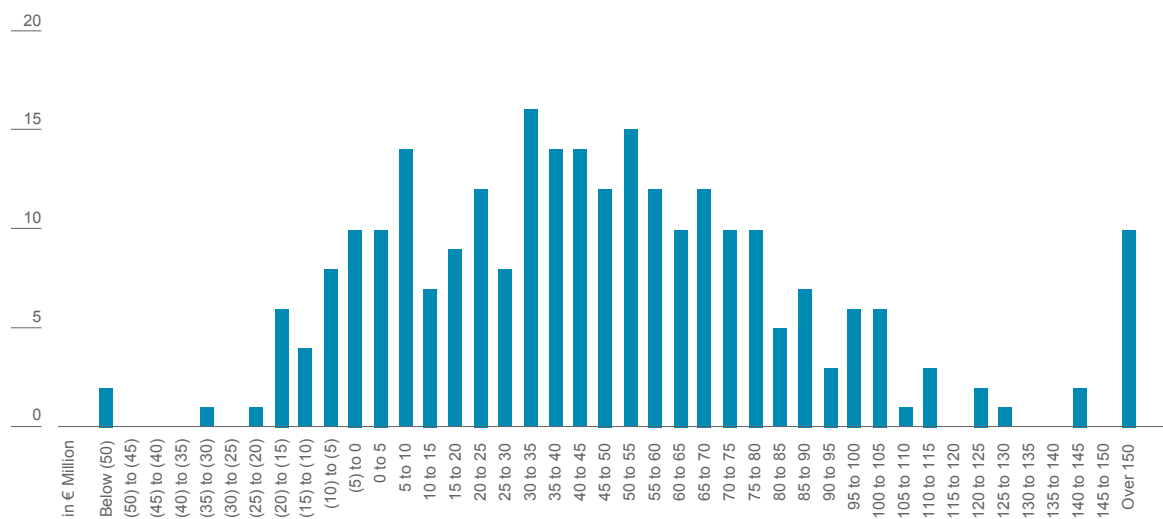


### Daily Income of the Group's Trading Units

The following histogram shows the distribution of daily income of the Group's trading units in 2011 (excluding Postbank). It displays the number of trading days on which the Group reached each level of trading income shown on the horizontal axis in millions of euro.

#### Income of Trading Units in 2011

Days



The Group's trading units achieved a positive actual income for 88 % of the trading days in 2011 (versus 92 % in 2010).

### Economic Capital Usage for the Group's Trading Market Risk

The economic capital usage for market risk arising from the trading units totaled € 4.7 billion at year-end 2011 compared € 6.4 billion at year-end 2010.

Traded market risk decreased by € 0.7 billion and the traded default risk decreased by € 1.0 billion. Both were driven by broad risk reduction as well as defensive positioning across all asset classes as the European sovereign crisis worsened. Postbank's contribution to the Group's economic capital usage for trading market risk was minimal.

Economic capital for traded default risk represents an estimate of the default and migration risks of credit products at a 99.98 % confidence level, taking into account the liquidity horizons of the respective sub-portfolios. It covers the following positions:

- Fair value assets in the banking book;
- Unsecuritized credit products in the trading book excluding correlation trading portfolio;
- Securitized products in the trading book excluding correlation trading portfolio;
- Correlation trading portfolio.

The traded default risk economic capital for the correlation trading portfolio is derived by scaling its regulatory capital under the comprehensive risk measure to the economic capital confidence level. The scaling is performed by employing Extreme Value Theory.

For all other positions traded default risk economic capital is calculated with the Group's credit portfolio model. In order to capture diversification and concentration effects the Group performs a joint calculation for traded default risk economic capital and credit risk economic capital. Important parameters for traded default risk are exposures, recovery rates and default probabilities as well as maturities. Exposures, recovery rates and default probabilities are derived from market information and external ratings for the trading book and internal assessments for the banking book as for credit risk economic capital. Rating migrations are governed by migration matrices, which are obtained from historical rating time series from rating agencies and internal observations. 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.

## 8.4 Valuation of Market Risk Positions

A substantial percentage of the Group's financial assets and liabilities carried at fair value are based on, or derived from, observable prices or inputs. The availability of observable prices or inputs varies by product and market, and may change over time. For example, observable prices or inputs are usually available for: liquid securities; exchange traded derivatives; over-the-counter (OTC) derivatives transacted in liquid trading markets such as interest rate swaps, foreign exchange forward and option contracts in G7 currencies; and equity swap and option contracts on listed securities or indices. If observable prices or inputs are available, they are utilized in the determination of fair value and, as such, fair value can be determined without significant judgment. This includes instruments for which the fair value is derived from a valuation model that is standard across the industry and the inputs are directly observable. This is the case for many generic swap and option contracts.

In other markets or for certain instruments, observable prices or inputs are not available, and fair value is determined using valuation techniques appropriate for the particular instrument. For example, instruments subject to valuation techniques include: trading loans and other loans or loan commitments designated at fair value through profit or loss, under the fair value option; new, complex and long-dated OTC derivatives; transactions in immature or limited markets; distressed debt securities and loans; private equity securities and retained interests in securitizations of financial assets. 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 and liquidity in the market. Valuation techniques include industry standard models based on discounted cash flow analysis, which are dependent upon estimated future cash flows and the discount rate used. For more complex products, the valuation models include more complex modeling techniques, parameters and assumptions,

such as volatility, correlation, prepayment speeds, default rates and loss severity. Management judgment is required in the selection and application of the appropriate parameters, assumptions and modeling techniques. Because the objective of using a valuation technique is to establish the price at which market participants would currently transact, the valuation techniques incorporate all factors that the Group believes market participants would consider in setting a transaction price.

Valuation adjustments are an integral part of the fair value process that requires the exercise of judgment. In making appropriate valuation adjustments, the Group follows methodologies that consider factors such as bid-offer spread valuation adjustments, liquidity, and credit risk (both counterparty credit risk in relation to financial assets and the Group's own credit risk in relation to financial liabilities which are at fair value through profit or loss).

The fair value of the Group's financial liabilities which are at fair value through profit or loss (e.g., OTC derivative liabilities and structured note liabilities designated at fair value through profit or loss) incorporates the change in the Group's own credit risk of the financial liability. For derivative liabilities the Group considers its own credit-worthiness by assessing all counterparties' potential future exposure to the Group, taking into account any collateral provided, the effect of any master netting agreements, expected loss given default and the Group's own credit risk based on historic default levels. The change in the Group's own credit risk for structured note liabilities is calculated by discounting the contractual cash flows of the instrument using the rate at which similar instruments would be issued at the measurement date. The resulting fair value is an estimate of the price at which the specific liability would be exchanged at the measurement date with another market participant.

Under IFRS, if there are significant unobservable inputs used in the valuation technique as of the trade date the financial instrument is recognized at the transaction price and any trade date profit is deferred. Management judgment is required in determining whether there exist significant unobservable inputs in the valuation technique. Once deferred the decision to subsequently recognize the trade date profit requires a careful assessment of the then current facts and circumstances supporting observability of parameters and/or risk mitigation.

The Group has established internal control procedures over the valuation process to provide assurance over the appropriateness of the fair values applied. If fair value is determined by valuation models, the assumptions and techniques within the models are independently validated by a specialist group. Price and parameter inputs, assumptions and valuation adjustments are subject to verification and review processes. If the price and parameter inputs are observable, they are verified against independent sources.

If prices and parameter inputs or assumptions are not observable, the appropriateness of fair value is subject to additional procedures to assess its reasonableness. Such procedures include performing revaluations using independently generated models, assessing the valuations against appropriate proxy instruments, performing sensitivity analysis and extrapolation techniques, and considering other benchmarks. Assessment is made as to whether the valuation techniques yield fair value estimates that are reflective of the way the market operates by calibrating the results of the valuation models against market transactions. These procedures require the application of management judgment.

Other valuation controls include review and analysis of daily profit and loss, validation of valuation through close out profit and loss and Value-at-Risk back-testing.



## 9. Nontrading Market Risk

### 9.1 Equity Investments in the Banking Book

Equity investments which are neither consolidated for regulatory purposes nor deducted from the Group's own funds are held as equity positions in the regulatory banking book. In the Group's consolidated balance sheet, these equity investments are either classified as "Financial assets available for sale ("AFS")" or "Equity method investments". An immaterial amount of financial assets designated at fair value through profit and loss which are equity interests is included in the banking book. These investments are not addressed in the following chapters.

#### Accounting and Valuation Policies for Equity Investments

AFS equity instruments are initially recognized at fair value plus transaction costs that are directly attributable to the acquisition of that financial asset. Financial assets classified as AFS are carried at fair value with the changes in fair value generally reported in equity unless the asset is subject to a fair value hedge or is impaired. At each balance sheet date, management assesses whether there is objective evidence that an individual asset is impaired. Objective evidence of impairment includes a significant or prolonged decline in the fair value of the investment below cost. The amount of impairment is the difference between the acquisition cost and current fair value of the asset less any previously recognized impairment. Impairments of AFS equity investments cannot be reversed. Increases in their fair value after impairment are recognized in equity.

Consistent with the valuation of financial instruments, fair value of equity securities is initially and subsequently determined using quoted prices in active markets or valuation techniques, where prices quoted in active markets are not available.

The Group reports investments in associates and joint ventures under the equity method of accounting. Equity method investments are initially recorded at cost including any directly related transaction costs incurred in the acquisition, and subsequently increased (or decreased) to reflect both the Group's pro-rata share of the post-acquisition net income (or loss) and other movements included directly in the equity of the entity. Goodwill arising on the acquisition is included in the carrying value of the investment (net of any accumulated impairment loss). At each balance sheet date, the Group assesses whether there is any objective evidence that the investment in an associate or jointly controlled entity is impaired. If there is objective evidence of impairment, an impairment test is performed by comparing the investment's recoverable amount, which is the higher of its value in use and fair value less costs to sell, with its carrying amount. Equity method losses in excess of the Group's carrying value of the investment in the entity are charged against other assets held by the Group related to the investee. If those assets are written down to zero, a determination is made whether to report additional losses based on the Group's obligation to fund such losses.

For further detail on the Group's accounting and valuation policies related to equity investments please refer to Notes 01 "Significant Accounting Policies", 14 "Financial Instruments carried at Fair Value" and 17 "Equity Method Investments" in the Group's Financial Report 2011.

## Equity Investments Held

The following table presents the Group's equity investments separately for AFS and equity method investments and further broken down into exchange-traded and non-exchange-traded positions based on their carrying value. A disparity between the carrying value of the investment positions and their fair value was only observable for the exchange-traded equity method investments, which had a carrying value of € 2.2 billion and a fair value of € 2.1 billion as of December 31, 2011.

Table 61 Equity Investments According to IFRS Classification

in € m. <sup>1,2</sup>	Carrying value	
	Dec 31, 2011	Dec 31, 2010
<b>Financial assets available for sale equity instruments</b>	<b>1,591</b>	<b>2,984</b>
Exchange-traded positions	345	608
Non-exchange-traded positions <sup>3</sup>	1,246	2,376
<b>Equity method investments</b>	<b>3,813</b>	<b>2,661</b>
Exchange-traded positions	2,227	280
Non-exchange-traded positions <sup>3</sup>	1,586	2,381
<b>Total equity investments</b>	<b>5,404</b>	<b>5,645</b>

<sup>1</sup> Equity investments held by entities, which are consolidated for IFRS purposes but not consolidated for regulatory purposes, are included in the table. Entities holding equity investments which are considered for regulatory purposes but not consolidated according to IFRS, do not provide IFRS balance sheet and profit or loss information, and are excluded from this table. The regulatory exposure value ("EAD") of these excluded equity investments amounted to € 116 million as of December 31, 2011, and € 93 million as of December 31, 2010.

<sup>2</sup> Other positions like equity underlyings resulting from derivative transactions or certain subordinated bonds which are also assigned to the exposure class "Equity in the banking book" are excluded from the table. Their EAD amounted to € 0.3 billion as of December 31, 2011, and € 1.1 billion as of December 31, 2010.

<sup>3</sup> The "Non-exchange-traded positions" combine the two equity classes "Non-exchange-traded, but belonging to an adequately diversified equity portfolio" and "Other equity positions" according to Section 78 SolvV.

In addition to the above, the Group's regulatory requirements consider € 7.1 billion EAD as of December 31, 2011, and € 6.7 billion EAD as of December 31, 2010, in respect of equity investments which are Group-internal from an IFRS perspective.

The table below summarizes the realized and unrealized gains and losses resulting from equity investments. For AFS equity investments, the components considered are realized gains and losses from sales and liquidations as well as unrealized revaluation gains and losses and impairments. For equity method investments, the gain and loss elements consist of realized gains and losses from sales and liquidations, pro-rata share of net income (loss), impairments and unrealized revaluation gains (losses) in form of the differences between carrying amounts and fair values. In this respect, the realized gains (losses) on disposals, the impairments and the pro-rata share of net income (loss) are referring to the reporting period 2011 and 2010 whereas the unrealized revaluation gains (losses) as well as the difference between the carrying values and the fair values for the at equity investments represent the amounts as of December 31, 2011, and December 31, 2010.

**Table 62 Realized Gains (Losses) in the Reporting Period and Unrealized Gains (Losses) at Year-end from Equity Investments**

in € m. <sup>1,2</sup>	2011	2010
Gains and losses on disposal	204	218
Impairments <sup>3</sup>	(625)	(2,554) <sup>4</sup>
Pro-rata share of net income (loss)	222	457
<b>Total realized gains (losses) from equity investments</b>	<b>(199)</b>	<b>(1,879)</b>
	Dec 31, 2011	Dec 31, 2010
Unrealized revaluation gains (losses) <sup>5</sup>	450	641
Difference between carrying value and fair value	(152)	280
<b>Total unrealized gains (losses) from equity investments</b>	<b>298</b>	<b>921</b>

<sup>1</sup> Equity investments held by entities, which are consolidated for IFRS purposes but not consolidated for regulatory purposes, are included in the table. Entities holding equity investments which are considered for regulatory purposes but not consolidated according to IFRS, do not provide IFRS balance sheet and profit or loss information, and are excluded from this table. The regulatory exposure value ("EAD") of these excluded equity investments amounted to € 116 million as of December 31, 2011, and € 93 million as of December 31, 2010.

<sup>2</sup> Other positions like equity underlying resulting from derivative transactions or certain subordinated bonds which are also assigned to the exposure class "Equity in the banking book" are excluded from the table. Their EAD amounted to € 0.3 billion as of December 31, 2011, and € 1.1 billion as of December 31, 2010.

<sup>3</sup> The impairment charge as of December 31, 2011 included an amount of € 457 million related to a generic pharmaceutical group. The impairment charge as of December 31, 2010 primarily resulted from the revaluation of the previous equity method investment in Deutsche Postbank AG. In 2010 a charge of approximately € 2.3 billion attributable to the equity method investment in Deutsche Postbank AG prior to consolidation was included (for further details refer to Note 04 "Acquisitions and Dispositions" in the Group's Financial Report 2011).

<sup>4</sup> Due to a revised allocation process, 2010 figures have been aligned and are now reflecting the 2011 allocation process.

<sup>5</sup> These are revaluation gains (losses) related to equity investments. Overall the unrealized gains (losses) on listed securities as to be determined for regulatory purposes were € 155 million as of December 31, 2011, 45 % of which were included in Tier 2 capital, and € 498 million as of December 31, 2010, 45 % of which were included in Tier 2 capital.

The Group holds equity investments with the intent to realize profits by taking advantage of market opportunities as well as for strategic reasons. Only a smaller part of the investments are intended to support a specific business strategy of a business division as part of a complex customer transaction.

From a management point of view, the following group divisions assume responsibility for equity investments the Group entered into:

- The Corporate Investments Group Division ("CI") manages the global principal investment activities of the Group. The principal investment activities include certain credit exposures, certain private equity and venture capital investments, certain private equity fund investments, certain corporate real estate investments, the industrial holdings of the Group and certain other non-strategic investments. Historically, the mission of CI has been to provide financial, strategic, operational and managerial capital to enhance the values of the portfolio companies in which the group division has invested.
- The group divisions Corporate & Investment Bank and Private Clients & Asset Management mainly hold investments in the bank's alternative asset portfolio for profit realization as well as for strategic reasons.

## 9.2 Interest Rate Risk in the Banking Book

### Assessment of Market Risk in Nontrading Portfolios excluding Postbank – Interest Rate Risk

The majority of the Group's interest rate risk arising from nontrading asset and liability positions, with the exception of some entities, has been transferred through internal transactions to the Markets business division within the Corporate & Investment Bank group division. This internally transferred interest rate risk is managed on the basis of value-at-risk, as reflected in trading portfolio figures. The treatment of interest rate risk in the Group's trading portfolios and the application of the value-at-risk model are discussed in Chapter 8 "Trading Market Risk".

The most notable exceptions from the aforementioned paragraph are in the Private & Business Clients corporate division in Germany, the Private Wealth Management mortgage business in the U.S., and the financing structures of strategic acquisitions in Corporate Investments.

The Group's Private & Business Clients corporate division, a nontrading division, and the business division Private Wealth Management manage interest rate risk separately through dedicated Asset and Liability Management departments. The measurement of the interest rate risk by Asset and Liability Management departments of the Private & Business Clients corporate division is performed daily and for Private Wealth Management weekly. Interest rate risk from strategic acquisition financing structures within the Corporate Investment group division is monitored quarterly.

The nature of interest rate risk in the banking book stems from residual asset/liability mismatches. Measuring interest rate risks in the banking book is based upon assumptions with respect to client behavior, future availability of deposit balances and sensitivities of deposit rates versus market interest rates resulting in a longer than contractual effective duration. Those parameters are subject to stress testing within the Group's Economic Capital framework. Additionally, consideration is made regarding early prepayment behavior for loan products. The parameters are based on historical observations, statistical analyses and expert assessments. If the future evolution of balances, rates or client behavior differ from these assumptions, then this could have an impact on the Group's interest rate risks in the banking book.

The changes of present values of the banking book positions when applying the regulatory required parallel yield curve shifts of (200) and +200 basis points during 2011 remained below 1 % of the Group's total regulatory capital. Consequently, interest rate risk in the banking book is considered immaterial for the Group excluding Postbank.

### Assessment of Interest Rate Risk in the Banking Book of Postbank

For Postbank, the interest rate risk in the banking book is calculated by taking into account all interest rate risk-bearing balance sheet items and interest-sensitive off-balance sheet items in accordance with their internal management and models. Measuring interest rate risks in the banking book is based upon key assumptions in particular regarding client behavior with respect to deposits' effective duration and loan prepayments. The majority of interest rate risk is measured daily.

When applying the regulatory required parallel yield curve shifts of (200) and +200 basis points to the Postbank banking book, the daily changes in value during 2011 remained in all cases below the regulatory reporting threshold of 20 % of regulatory capital.

### Assessment of the total Interest Rate Risk in the Banking Book of the Group including Postbank

The changes of present values of the banking book positions when applying the regulatory required parallel yield curve shifts of (200) and +200 basis points during 2011 remained below 1% of the Group's total regulatory capital. Consequently, interest rate risk in the banking book is considered immaterial for the Group including Postbank.

## 9.3 Nontrading Market Risk Management

The market risk component of the Group's nontrading activities is overseen by dedicated Nontrading Market Risk Management units. These teams assume responsibility in particular for the management of equity and interest rate risk in the banking book which is described in more detail in Chapters 9.1 "Equity Investments in the Banking Book" and 9.2 "Interest Rate Risk in the Banking Book" above.

A further area of focus is the structural foreign exchange risk exposure – a significant contribution to the Group's foreign exchange risk in its nontrading portfolio – resulting from unhedged capital and retained earnings in non-euro currencies in certain subsidiaries, mainly U.S. and U.K. entities.

### Nontrading Market Risk Management

Nontrading Market Risk Management oversees a number of risk exposures resulting from various business activities and initiatives. Due to the variety of risk characteristics, nontrading market risk management is split into three areas:

- Nontrading Market Risk core team – covering market risks in Private and Business Clients, Global Transaction Banking, Private Wealth Management and Corporate Investments as well as structural foreign exchange risks, equity compensation risks and pension risks.
- Principal Investments – specializing in the risk-related aspects of the Group's nontrading alternative asset activities and performing regular reviews of the risk profile of the nontrading alternative asset portfolios.
- Asset Management Risk – specializing in risk-related aspects of the Group's asset and fund management business. Key risks in this area arise from performance and/or principal guarantees and reputational risk related to managing client funds.

The majority of the interest rate and foreign exchange risks arising from Deutsche Bank's nontrading asset and liability positions, excluding Postbank, has been transferred through internal hedges to trading books within Corporate & Investment Bank and is therefore reflected and managed through the value-at-risk numbers. Of the remaining risks that have not been transferred through those hedges, foreign exchange risk is mitigated through match funding the investment in the same currency and so only residual risk remains in the portfolios. For these residual positions, there is immaterial interest rate risk remaining from the mismatch between the funding term and the expected maturity of the investment.

Structural foreign exchange risk exposure arises from capital and retained earnings in non-euro currencies in certain subsidiaries, mainly U.S. and U.K. entities, and represents the bulk of foreign exchange risk in the Group's nontrading portfolio.

In addition to the above risks, the Group's Nontrading Market Risk Management team has the mandate to monitor and manage risks arising from the Group's equity compensation plans and pension liabilities. It also manages risks related to asset management activities, primarily resulting from guaranteed funds. Moreover, the Group's Private and Business Clients, Global Transaction Banking and Private Wealth Management businesses are subject to model risk with regard to client deposits as well as savings and loan products. This risk materializes if client behavior in response to interest rate movements deviates substantially from historical observed values.

The Risk Executive Committee and the Capital and Risk Committee supervise the Group's nontrading market risk exposures. Investment proposals for strategic investments are analyzed by the Group Investment Committee. Depending on the size, any strategic investment requires approval from the Group Investment Committee, the Management Board or the Supervisory Board. The development of strategic investments is monitored by the Group Investment Committee on a regular basis. Multiple members of the Capital and Risk Committee & Risk Executive Committee are also members of the Group Investment Committee, ensuring a close link between these committees.

#### Assessment of Market Risk in Nontrading Portfolios (excluding Postbank)

Market risk is quantified through the use of stress testing procedures. The Group uses stress tests that are specific to each risk class and which consider, among other factors, large historically observed market moves, the liquidity of each asset class, and changes in client behavior in relation to deposit products. This assessment forms the basis of the economic capital calculations which enable the Group to actively monitor and manage its nontrading market risk.

#### Assessment of Market Risk in the Nontrading Portfolios at Postbank

Postbank uses the value-at-risk concept to quantify and monitor the market risk it assumes in the banking book. Value-at-risk is calculated using a Monte Carlo Simulation method. The risk factors taken into account in value-at-risk include interest rates, equity prices, foreign exchange rates, and volatilities, along with risks arising from changes in credit spreads. Correlation effects between the risk factors are derived from equally-weighted historical data.

Deutsche Bank does not use Postbank's value-at-risk measure for its nontrading market risks. The risks from Postbank are however, integrated into the Group's economic capital results.

### Economic Capital Usage for the Group's Nontrading Market Risk Portfolios per Business Area

The table below shows the economic capital usage for the Group's nontrading portfolios by business division and includes the economic capital usage of Postbank calculated using the Group's methodology.

**Table 63 Economic Capital Usage for the Group's Nontrading Market Risk Portfolios per Business Area**

in € m.	Dec 31, 2011	Dec 31, 2010
CIB	972	1,351
PCAM	3,376	3,524
Corporate Investments	1,418	1,051
Consolidation & Adjustments	1,512	814
<b>Total</b>	<b>7,278</b>	<b>6,740</b>

Nontrading market risk economic capital usage totaled € 7.3 billion as of December 31, 2011, which is € 0.5 billion, or 8%, above the Group's economic capital usage at year-end 2010.

The decrease in Corporate & Investment Bank ("CIB") nontrading market risk economic capital of € 379 million was mainly driven by the transfer of a subordinated loan to Corporate Investments, and various sales within Corporate & Investment Bank's investment portfolio.

Economic capital usage for Private Clients and Asset Management ("PCAM") decreased by € 148 million in 2011. The decrease was mainly caused by lower economic capital usage of Asset Management's Guaranteed Funds portfolio (decreased by € 504 million), caused by changes to the fund population, portfolio composition and by optimized maturity profiles. Asset sales within the Sal. Oppenheim portfolio further reduced economic capital by € 150 million. These exposure reductions were partly offset by the additional economic capital usage for the Group's increased stake in Hua Xia Bank Company Limited (€ 619 million).

The increase in Corporate Investments ("CI") economic capital of € 367 million was mainly triggered by the above mentioned transfer of a subordinated loan and increased exposure in various other assets with an economic capital increase of € 194 million. The major change in Consolidation & Adjustments was driven by an increase of structural foreign exchange risk of € 533 million.

### Carrying Value and Economic Capital Usage for Nontrading Market Risk Portfolios

In 2011, the classification of the major categories was redefined for the Group's nontrading portfolios closely aligning them to the internal risk management and governance process.

The table below shows the carrying values and economic capital usages separately for the Group's nontrading portfolios for 2011 and the respective 2010 using the same categorization.

**Table 64 Carrying Value and Economic Capital Usage for Nontrading Portfolios**

in € bn.	Carrying value		Economic capital usage	
	Dec 31, 2011	Dec 31, 2010	Dec 31, 2011	Dec 31, 2010
Strategic Investments	2.9	2.1	1.2	0.6
Alternative Assets <sup>1</sup>	6.9	8.7	2.2	2.5
Principal Investments	2.6	3.7	0.9	1.0
Other Non Strategic Investment Assets	4.3	5.0	1.3	1.5
Other nontrading market risks <sup>2</sup>	N/A	N/A	3.9	3.6
<b>Total</b>	<b>9.8</b>	<b>10.8</b>	<b>7.3</b>	<b>6.7</b>

<sup>1</sup> Includes investments held by Postbank with carrying value of € 1.5 billion (2010: € 1.9 billion) and Economic Capital of € 0.0 billion (2010: € 0.1 billion).

<sup>2</sup> N/A indicates that the risk is mostly related to off-balance sheet and liabilities items; includes Economic Capital of € 0.9 billion (2010: € 0.9 billion) related to Postbank.

The total economic capital figures for nontrading market risk currently do not take into account diversification benefits between the asset categories except for those of equity compensation and structural foreign exchange risk and pension risk.

- **Strategic Investments.** Economic capital usage of € 1.2 billion as of December 31, 2011 was mainly driven by the Group's participations in Hua Xia Bank Company Limited and Abbey Life Assurance Company.
- **Alternative assets.** The Group's alternative assets portfolio includes principal investments, real estate investments (including mezzanine debt) and small investments in hedge funds. Principal investments are composed of direct investments in private equity, mezzanine debt, short-term investments in financial sponsor leveraged buy-out funds, bridge capital to leveraged buy-out funds and private equity led transactions. The alternative assets portfolio has some concentration in infrastructure and real estate assets. Total economic capital usage for this portfolio was € 2.2 billion as of December 31, 2011.
- **Other nontrading market risks:**
  - **Interest Rate Risk.** Besides the allocation of economic capital to outright interest rate risk in the nontrading market risk portfolio, a main component in this category is the maturity transformation of contractually short term deposits. The effective duration of contractually short term deposits is based upon observable client behavior, elasticity of deposit rates to market interest rates (DRE), volatility of deposit balances and Deutsche Bank's own credit spread. Economic capital is derived by stressing modeling assumptions in – particular the DRE – for the effective duration of overnight deposits. Behavioral and economic characteristics are taken into account when calculating the effective duration and optional exposures from the Group's mortgages business. In total the economic capital usage was € 1.5 billion for interest rate risk as of December 31, 2011 mainly driven by Private Business Clients including Postbank, BHW and DB Bauspar.
  - **Equity Compensation Risk.** Risk arising from structural short position in the Group's own share price arising from restricted equity units. The economic capital usage was € (101) million as of December 31, 2011, on a diversified basis. The negative contribution to the Group's diversified economic capital was derived from the fact that a reduction of the Group's share price in a downside scenario as expressed by economic capital calculation methodology would reduce the negative impact on the Group's capital position from the equity compensation liabilities.



- Pension Risk. Risk arising from the Group's defined benefit obligations, including interest rate risk and inflation risk, credit spread risk, equity risk and longevity risk. Economic capital usage, excluding Postbank, was € 141 million as of December 31, 2011. The economic capital charge allocated at Deutsche Bank Group level for respective pension risks of Postbank amounted to € 50 million.
- Structural Foreign Exchange Risk. The Group's foreign exchange exposure arising from unhedged capital and retained earnings in non-euro currencies in certain subsidiaries. The Group's economic capital usage was € 1.5 billion as of December 31, 2011 on a diversified basis.
- Guaranteed Funds. The Group's economic capital usage was € 931 million as of December 31, 2011.

### Value-at-Risk of the Banking Book at Postbank

The following table shows the value-at-risk of Postbank's banking book (calculated with a 99 % confidence level and a one-day holding period). The calculation incorporates all substantial market risk-bearing positions in the banking book, with the majority of the exposure arising from interest rate and credit spread risks.

Table 65 Value-at-Risk of the Banking Book at Postbank

in € m.	Dec 31, 2011	Dec 31, 2010
Average <sup>1</sup>	109.1	-
Maximum <sup>1</sup>	139.7	-
Minimum <sup>1</sup>	77.7	-
Period-end	139.7	121.6
<b>Limit at period-end</b>	<b>165.0</b>	<b>152.3</b>

<sup>1</sup> In 2010 the average, maximum and minimum value-at-risk had no material variance for the period since consolidation of Postbank.

## 10. Operational Risk

### Definition of Operational Risk

“Operational risk is the potential for failure (incl. the legal component) in relation to employees, contractual specifications and documentation, technology, infrastructure failure and disasters, external influences and customer relationships.”

Operational risk excludes business and reputational risk.

### Organizational Structure

The Head of Operational Risk & Business Continuity Management chairs the Operational Risk Management Committee, which is a permanent sub-committee of the Risk Executive Committee and is composed of the operational risk officers from the Group’s business divisions and the Group’s infrastructure functions. It is the main decision-making committee for all operational risk management matters.

While the day-to-day operational risk management lies with the Group’s business divisions and infrastructure functions, the Operational Risk & Business Continuity Management function manages the cross divisional and cross regional operational risk as well as risk concentrations and ensures a consistent application of the Group’s operational risk management strategy across the bank. Based on this Business Partnership Model the Group ensures close monitoring and high awareness of operational risk.

### Managing the Group’s Operational Risk

The Group manages operational risk based on a Group-wide consistent framework that enables the Group to determine its operational risk profile in comparison to its risk appetite and systematically identify operational risk themes and concentrations to define risk mitigating measures and priorities.

The Group applies a number of techniques to efficiently manage the operational risk in its business, for example:

- The Group performs systematic risk analyses, root cause analyses and lessons learned activities for events above € 1 million to identify inherent areas of risk and to define appropriate risk mitigating actions which are monitored for resolution. The prerequisite for these detailed analyses and the timely information of the Group’s senior management on the development of the operational risk events and on single larger events is the continuous collection of all losses above € 10,000 arising from operational risk events in the Group’s “db-Incident Reporting System”.
- The Group systematically utilizes information on external events occurring in the banking industry to ensure that similar incidents will not happen to the Group.
- Key Risk Indicators (“KRI”) are used to monitor the operational risk profile and alert the organization to impending problems in a timely fashion. They allow via the Group’s tool “dbScore” the monitoring of the bank’s control culture and business environment and trigger risk mitigating actions. KRIs facilitate the forward looking management of operational risk based on early warning signals returned by the KRIs and as such an allocation of capital via the qualitative adjustment.

- In the Group's bottom-up self assessment process, which is conducted at least annually, areas with high risk potential are highlighted and risk mitigating measures to resolve issue are identified. In general, it is performed in the Group's tool "dbSAT". On a regular basis the Group conducts risk workshops aiming to evaluate risks specific to countries and local legal entities the Group is operating in and take appropriate risk mitigating actions.
- In addition to internal and external loss information scenarios are utilized and actions are derived from them. The set of scenarios consists of relevant external scenarios provided by a public database and internal scenarios. The latter are derived to achieve full coverage of the risks.
- Regular operational risk profile reports at Group level for the business divisions, the countries the Group is operating in and the Group's infrastructure functions are reviewed and discussed with the department's senior management. The regular performance of the risk profile reviews enables the Group to early detect changes to the units risk profile as well as risk concentrations across the Group and to take corrective actions.
- The Group assesses and approves the impact of changes to its risk profile as a result of new products, outsourcings, strategic initiatives and acquisitions and divestments.
- Once operational risks are identified, mitigation is required following the "as low as reasonably practicable (ALARP)" principle by balancing the cost of mitigation with the benefits thereof and formally accepting the residual risk. Risks which contravene applicable national or international regulations and legislation cannot be accepted; once identified, such risks must always be mitigated.
- Within the tracking tool "dbTrack" the Group monitors risk mitigating measures identified via Operational Risk Management techniques for resolution. Higher than important residual operational risks need to be accepted by the ORMC.
- The Group performs top risk analyses in which the results of the aforementioned activities are considered. The top risk analyses mainly contribute into the annual operational risk management strategy and planning process. Besides the operational risk management strategic and tactical planning the Group defines capital and expected loss targets which are monitored on a regular basis within the quarterly forecasting process.
- A standardized quality assurance processes is applied to quality review risk management decisions and model inputs.

## Measuring The Group's Operational Risks

The increase in economic capital is primarily explained by the implementation of a new safety margin applied in the Group's AMA model, intended to cover unforeseen legal risks from the current financial crisis.

**Table 66 Economic Capital Usage for Operational Risk**

in € m.	Dec 31, 2011	Dec 31, 2010
CIB	3.873	2.735
PCAM	917	939
CI	56	8
<b>Total economic capital usage for operational risk</b>	<b>4.846</b>	<b>3.682</b>

The Group calculates and measures the economic and regulatory capital for operational risk using the internal AMA methodology. Economic capital is derived from the 99.98 % percentile and allocated to the businesses and used in performance measurement and resource allocation, providing an incentive to manage operational risk, optimizing economic capital utilization. The regulatory capital operational risk applies the 99.9 % percentile. The Group's internal AMA capital calculation is based upon the loss distribution approach. Gross losses adjusted for direct recoveries from historical internal and external loss data (Operational Riskdata eXchange Association (ORX) consortium data and external scenarios from a public database), plus internal scenario data are used to estimate the risk profile (that is, a loss frequency and a loss severity distribution). Thereafter, the frequency and severity distributions are combined in a Monte Carlo Simulation to generate 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 the Group level covering expected and unexpected losses. Capital is then allocated to each of the business divisions and both a qualitative adjustment ("QA") and an expected losses deduction are made.

The QA reflects the effectiveness and performance of the day-to-day operational risk management activities via KRIs and self assessment scores focusing on the business environment and internal control factors. QA is applied as a percentage adjustment to the final capital number. This approach makes qualitative adjustment transparent to the management of the businesses and provides feedback on their risk profile as well as on the success of their management of operational risk. It thus provides incentives for the businesses to continuously improve Operational Risk Management in their areas.

The expected loss for operational risk is based on historical loss experience and expert judgment considering business changes denoting the expected cost of operational losses for doing business. To the extent it is considered in the divisional business plans it is deducted from the AMA capital figure. The unexpected losses for the business divisions (after QA and expected loss) are aggregated to produce the Group AMA capital figure.

Since 2008, the Group has maintained approval by the BaFin to use the AMA. The Group is waiting for regulatory approval to integrate Postbank into its regulatory capital calculation.

### The Group's Operational Risk Management Stress Testing Concept

The Group conducts stress testing on a regular basis and isolated from the AMA methodology to analyze the impact of extreme situations on the Group's capital and the profit-and-loss account. In 2011 the Group introduced a quarterly stress test which is based on impact assessments related to three different stress scenarios with gradually increasing intensity. Additionally, the Group performs complementary sensitivity analysis and contributes to firm wide stress tests including reverse stress testing.

### The Group's AMA Model Validation and Quality Assurance Concept

The Group independently validates all its AMA model components such as but not limited to scenario analysis, KRIs and risk assessments, expected loss and internal loss data individually. The results of the validation exercise are summarized in validation reports and issues identified followed up for resolution. By this a permanent enhancement of the methodologies is ensured. Quality Assurance reviews are performed for AMA model components which require data input provided by Business Divisions and result in capital impact. The data and information is challenged and compared across Business Divisions to ensure consistency and adequacy for any capital reduction or add-on.

### Role of Corporate Insurance/Deukona

The definition of the Group's insurance strategy and supporting insurance policy and guidelines is the responsibility of the Group's specialized unit Corporate Insurance/Deukona ("CI/D"). CI/D is responsible for the Group's global corporate insurance policy which is approved by the Management Board.

CI/D is responsible for acquiring insurance coverage and for negotiating contract terms and premiums. CI/D also has a role in the allocation of insurance premiums to the businesses. CI/D specialists assist in devising the method for reflecting insurance in the capital calculations and in arriving at parameters to reflect the regulatory requirements. They validate the settings of insurance parameters used in the AMA model and provide respective updates. CI/D is actively involved in industry efforts to reflect the effect of insurance in the results of the capital calculations.

The Group buys insurance in order to protect itself against unexpected and substantial unforeseeable losses. The identification, definition of magnitude and estimation procedures used are based on the recognized insurance terms of "common sense", "state-of-the-art" and/or "benchmarking". The maximum limit per insured risk takes into account the reliability of the insurer and a cost/benefit ratio, especially in cases in which the insurance market tries to reduce coverage by restricted/limited policy wordings and specific exclusions.

The Group maintains a number of captive insurance companies, both primary and re-insurance companies. However, insurance contracts provided are only considered in the modeling/calculation of insurance-related reductions of operational risk capital requirements where the risk is re-insured in the external insurance market.

The regulatory capital figure includes a deduction for insurance coverage amounting to € 491 million. Currently, no other risk transfer techniques beyond insurance are recognized in the AMA model.

CI/D selects insurance partners in strict compliance with the regulatory requirements specified in the Solvency Regulations and the Operational Risks Experts Group recommendation on the recognition of insurance in advanced measurement approaches. The insurance portfolio, as well as CI/D activities are audited by Group Audit on a periodic basis.

### Operational Risk at Postbank

Postbank's approach to Operational Risk Management is largely comparable to Deutsche Bank's approach. The Management Board of Postbank is solely responsible for the management, control, and monitoring of operational risk. The Operational Risk Committee (ORK) commissioned by the Postbank Management Board defines the strategy and framework for controlling operational risk. Day-to-day management of operational risk is the responsibility of the individual units within Postbank. Strategic parameters for managing operational risk, both qualitative as well as quantitative, are part of the overall strategy.

At Postbank the economic capital requirements for operational risk both for Postbank as a whole and for the four business divisions individually have been determined using a standalone internal capital model to calculate capital requirements for operational risk. Postbank received the approval by the BaFin for their AMA in December 2010.

Within the consolidation of Postbank the results of the economic capital requirements for operational risk have been recalculated using Deutsche Bank's economic capital methodology for operational risk based upon pooled data from Deutsche Bank Group and Postbank and are reported in aggregate in Chapter 4.6 "Economic Capital Requirements" of this report.

## 11. Liquidity Risk

### 11.1 Liquidity Risk at Deutsche Bank Group (excluding Postbank)

Liquidity risk management safeguards the Group's ability to meet all payment obligations when they come due. The Group's liquidity risk management framework has been an important factor in maintaining adequate liquidity and in managing the Group's funding profile during 2011.

#### Liquidity Risk Management Framework

The Management Board defines the Group's liquidity risk strategy, and in particular the Group's tolerance for liquidity risk based on recommendations made by Treasury and the Capital and Risk Committee. At least once every year the Management Board will review and approve the limits which are applied to the Group to measure and control liquidity risk as well as the bank's long-term funding and issuance plan.

The Group's Treasury function is responsible for the management of liquidity and funding risk of Deutsche Bank globally as defined in the liquidity risk strategy. The Group's liquidity risk management framework is designed to identify, measure and manage the liquidity risk position of the Group. Treasury reports the bank's overall liquidity and funding to the Management Board at least weekly via a Liquidity Scorecard. The Group's liquidity risk management approach starts at the intraday level (operational liquidity) managing the daily payments queue, forecasting cash flows and factoring in the Group's access to Central Banks. It then covers tactical liquidity risk management dealing with access to secured and unsecured funding sources. Finally, the strategic perspective comprises the maturity profile of all assets and liabilities (Funding Matrix) and the Group's issuance strategy.

The Group's cash-flow based reporting system provides daily liquidity risk information to global and regional management.

Stress testing and scenario analysis play a central role in the Group's liquidity risk management framework. This also incorporates an assessment of asset liquidity, i.e. the characteristics of the Group's asset inventory, under various stress scenarios as well as contingent funding requirements from off-balance-sheet commitments. The monthly stress testing results are used in setting the Group's short-term wholesale funding limits (both unsecured and secured) and thereby ensuring the Group remains within the Board's overall liquidity risk tolerance.

#### Short-term Liquidity and Wholesale Funding

The Group-wide reporting system tracks all contractual cash flows from wholesale funding sources on a daily basis over a 12-month horizon. The system captures all cash flows from unsecured as well as from secured funding transactions. Wholesale funding limits, which are calibrated against the Group's stress testing results and are approved by the Management Board according to internal governance, express the Group's maximum tolerance for liquidity risk. These limits apply to the respective cumulative global cash outflows as well as the total volume of unsecured wholesale funding and are monitored on a daily basis. The Group's liquidity reserves are the primary mitigant against stresses in short-term wholesale funding markets. At an individual entity level the Group may set liquidity outflow limits across a broader range of cash flows where this is considered to be meaningful or appropriate.

## Funding Diversification

Diversification of the Group's funding profile in terms of investor types, regions, products and instruments is an important element of the liquidity risk management framework. The Group's core funding resources come from retail clients, long-term capital markets investors and transaction banking clients. Other customer deposits and borrowing from wholesale clients are additional sources of funding. The Group uses wholesale deposits primarily to fund liquid assets. To ensure the additional diversification of its refinancing activities, the Group has a Pfandbrief license allowing it to issue mortgage Pfandbriefe.

In 2011 the Group continued to focus on increasing its stable core funding components, while maintaining access to short-term wholesale funding markets, albeit on a relatively low level. Discretionary wholesale funding comprises a range of products e.g. CD, CP as well as term, call and overnight deposits across tenors up to one year. The acquisition of Postbank significantly increased the volume of the Group's core funding sources. Postbank's status as a regulated bank and publicly traded company, however, limits the Group's access to its liquidity.

The overall volume of discretionary wholesale funding and secured funding fluctuated between reporting dates based on the Group's underlying business activities. Higher volumes, primarily in secured funding transactions, are largely driven by increased client related securities financing activities as well as intra quarter growth in liquid trading inventories. The growth in discretionary wholesale funding during the year 2011 is mainly a reflection of the growth in cash and liquid trading assets within the Group's Corporate Banking & Securities Corporate Division.

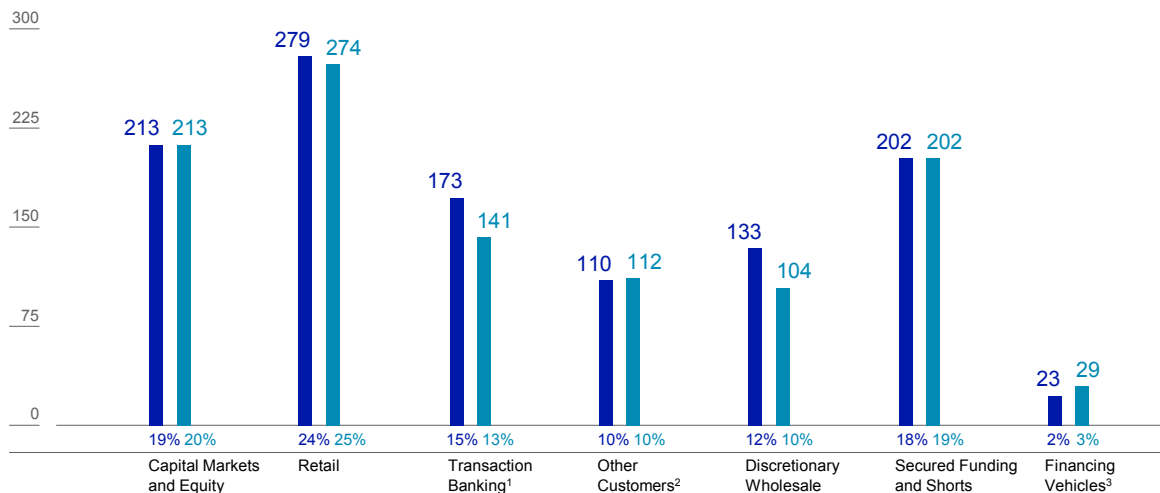
To avoid any unwanted reliance on these short-term funding sources, and to ensure a sound funding profile at the short end, which complies with the defined risk tolerance, the Group has implemented limit structures (across tenor) to these funding sources, which are derived from the Group's stress testing analysis.

The following chart shows the composition of the Group's external funding sources (on a consolidated basis including the contribution from Postbank) that contribute to the liquidity risk position as of December 31, 2011 and December 31, 2010, both in euro billion and as a percentage of the Group's total external funding sources.



## Composition of external funding sources

In € bn.



■ December 31, 2011: total € 1,133 billion

■ December 31, 2010: total € 1,075 billion

<sup>1</sup> Sponsored loans (e.g. from Kreditanstalt für Wiederaufbau and European Investment Bank) in the amount of € 4 billion, which were included in Capital Markets and Equity for December 31, 2010, have been reflected under Other Customers. Following a revised allocation of Postbank liabilities to funding during second quarter 2011, € 5 billion and € 6 billion were reallocated from Capital Markets and Equity and Retail, respectively, to Transaction Banking. Values for December 31, 2010, shown above have been adjusted accordingly.

<sup>2</sup> Other includes fiduciary, self-funding structures (e.g. X-markets), margin / Prime Brokerage cash balances (shown on a net basis)

<sup>3</sup> Includes ABCP-Conduits.

Reference: Reconciliation to total balance sheet: Derivatives & settlement balances € 899 billion (€ 706 billion), add-back for netting effect for Margin & Prime Brokerage cash balances (shown on a net basis) € 73 billion (€ 61 billion), other non-funding liabilities € 59 billion (€ 63 billion) for December 31, 2011 and December 31, 2010 respectively; figures may not add up due to rounding.

## Funding Matrix

The Group maps all funding-relevant assets and all liabilities into time buckets corresponding to their economic maturities to compile a maturity profile (funding matrix). Given that trading assets are typically more liquid than their contractual maturities suggest, the Group determines individual liquidity profiles reflecting their relative liquidity value. The Group takes assets and liabilities from the retail bank (mortgage loans and retail deposits) that show a behavior of being renewed or prolonged regardless of capital market conditions and assign them to time buckets reflecting the expected prolongation. Wholesale banking products are included with their contractual maturities.

The funding matrix identifies the excess or shortfall of assets over liabilities in each time bucket, facilitating management of open liquidity exposures. The funding matrix analysis together with the strategic liquidity planning process, which forecasts the funding supply and demand across business units, provides the key input parameter for the Group's annual capital market issuance plan. Upon approval by the Management Board the capital market issuance plan establishes issuing targets for securities by tenor, volume and instrument. As of the year-end 2011, the Group was long funded in each of the annual time buckets of the funding matrix (2 – 10 years).

## Funding and Issuance

2011 can be divided into two halves which were dominated by the evolution of the eurozone sovereign crisis: a fairly stable first six months during which the Group's five year CDS traded in a tight range of 82 – 132 bps, averaging 98 bps and, in contrast, a volatile second six months during which the Group's CDS traded in range of 99 – 316 bps, averaging 184 bps over the period. Although the spreads of the Group's bonds did not exhibit the same level of volatility, a similar contrast between first six months and second half six months could be observed.

Nonetheless, the Group issued in benchmark format in both six-month periods. By the end of first six months 2011, the Group raised € 13.3 billion of the Group's yearly requirement of € 19 billion. Over the course of the second half year 2011, the Group raised a further € 9.2 billion, taking the total to € 22.5 billion for the year, € 3.5 billion more than originally planned. Particularly noteworthy was a € 1.5 billion 2 year note, issued in September 2011. With its second Pfandbrief issuance of € 1 billion in March 2011 the Group further demonstrated its market access to an alternative, cost efficient funding source.

The average spread of the Group's issuance over the relevant floating index (e.g. Libor) was 65 bps for the full year without material differences between the first half year and the second half year. In response to the weaker market in second half year however, the Group shortened the average tenor of its issuance from approximately 5 years in the first half year to approximately 4 years in the second half year, resulting in an average of 4.3 years for the Group's issuance for the full year.

In 2012, the Group has modest refinancing needs of € 15–20 billion. The Group remains confident in its ability to raise private market funding through a variety of channels including benchmark issuances, private placements, covered bonds as well as retail networks and believe the Group is not overly dependent on any one market segment.

For information regarding the maturity profile of the Group's long-term debt, please refer to Note 31 "Long-Term Debt and Trust Preferred Securities" of the Group's consolidated financial statements.

## Transfer Pricing

The Group operates a transfer pricing framework that applies to all businesses and ensures pricing of (i) assets in accordance with their underlying liquidity risk, (ii) liabilities in accordance with their 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 transfer pricing framework the Group allocates funding and liquidity risk costs and benefits to the firm's business units and set financial incentives in line with the firm's liquidity risk guidelines. Transfer prices are subject to liquidity (term) premiums depending on market conditions. Liquidity premiums are set by Treasury and picked up by a segregated liquidity account. The Treasury liquidity account is the aggregator of long-term liquidity costs. The management and cost allocation of the liquidity account is the key variable for transfer pricing funding costs within Deutsche Bank.

## Stress Testing and Scenario Analysis

The Group uses stress testing and scenario analysis to evaluate the impact of sudden stress events on its liquidity position. The scenarios, the Group applies, have been based on historic events, such as the 1987 stock market crash, the 1990 U.S. liquidity crunch and the September 2001 terrorist attacks, liquidity crisis case studies and hypothetical events.

Also incorporated are the lessons learned from the latest financial markets crisis. They include the prolonged term money-market and secured funding freeze, collateral repudiation, reduced fungibility of currencies, stranded syndications as well as other systemic knock-on effects. The scenario types cover institution-specific events (e.g. rating downgrade), market related events (e.g. systemic market risk) as well as a combination of both, which links a systemic market shock with a multi-notch rating downgrade. Those scenarios are subject to regular reviews and reappraisal.

Under each of these scenarios the Group assumes a high degree of roll-overs of maturing loans to non-wholesale customers whereas rollover of liabilities will be partially impaired resulting in a funding gap. In addition the Group analyzes the potential funding requirements from off-balance sheet commitments (e.g. drawings of credit facilities and increased collateral requirements) which could materialize under stress. The Group then models the steps it would take to counterbalance the resulting net shortfall in funding. Countermeasures would include the Group's available cash and cash equivalents (over and above cash balances which form an integral part of the existing clearing and settlement activities), as well as asset liquidity from unencumbered securities.

The asset liquidity analysis thereby forms an integral piece of stress testing and tracks the volume and booking location within the Group's consolidated business inventory of unencumbered, liquid assets which the Group can use to raise liquidity via secured funding transactions. Securities inventories include a wide variety of different securities. As a first step, the Group segregates illiquid and liquid securities in each inventory. Subsequently the Group assigns liquidity values (haircuts) to different classes of liquid securities. The liquidity of these assets is an important element in protecting the Group against short-term liquidity squeezes.

The most immediately liquid and highest quality items within the above categories are aggregated and separately identified as the Group's liquidity reserves. These reserves comprise available cash and cash equivalents, highly liquid securities as well as other unencumbered central bank eligible assets. The volume of the liquidity reserves is a function of expected stress result. These reserves are held across the major currencies and locations on which the bank is active. Size and composition are subject to regular senior management review.

The following table presents the composition of the Group's liquidity reserves for the dates specified.

**Table 67 Liquidity Reserves**

in € bn.	Dec 31, 2011	Dec 31, 2010
Available cash and cash equivalents (held primarily at central banks)	136	66
Highly liquid securities (includes government, government guaranteed and agency securities)	65	52
Other unencumbered central bank eligible securities	18	32
<b>Total liquidity reserves</b>	<b>219</b>	<b>150</b>

Stress testing is fully integrated in the Group's liquidity risk management framework. For this purpose the Group uses the contractual wholesale cash flows per currency and product over an eight-week horizon (which the Group considers the most critical time span in a liquidity crisis) and applies the relevant stress case to all potential risk drivers from on balance sheet and off balance sheet products. Beyond the eight week time horizon the Group analyzes on a quarterly basis the impact of a more prolonged stress period extending out to twelve months, together with mitigation actions which may include some change of business model. The liquidity stress testing provides the basis for the bank's contingency funding plans which are approved by the Management Board.

The Group's stress testing analysis assesses its ability to generate sufficient liquidity under extreme conditions and is a key input when defining the Group's target liquidity risk position. The analysis is performed monthly. The following table shows stress testing results as of December 31, 2011. For each scenario, the table shows what the Group's cumulative funding gap would be over an eight-week horizon after occurrence of the triggering event, how much counterbalancing liquidity the Group could generate via different sources as well as the resulting net liquidity position.

**Table 68 Stress Testing Results**

in € bn.	Funding Gap <sup>1</sup>	Gap Closure <sup>2</sup>	Net Liquidity Position
Systemic market risk	45	226	181
Emerging markets	18	232	215
1 notch downgrade (DB specific)	45	233	188
Downgrade to A-2/P-2 (DB specific)	168	246	78
Combined <sup>3</sup>	190	241	51

<sup>1</sup> Funding gap caused by impaired rollover of liabilities and other projected outflows.

<sup>2</sup> Based on liquidity generation through countermeasures.

<sup>3</sup> Combined impact of systemic market risk and downgrade to A-2/P-2.

With the increasing importance of liquidity management in the financial industry, the Group maintains an active dialogue with central banks, supervisors, rating agencies and market participants on liquidity risk-related topics. The Group participates in a number of working groups regarding liquidity and support efforts to create industry-wide standards to evaluate and manage liquidity risk at financial institutions. In addition to the Group's internal liquidity management systems, the liquidity exposure of German banks is regulated by the Banking Act and regulations issued by the BaFin.

## 11.2 Liquidity Risk at Postbank

In general, Postbank's Financial Markets division is responsible for the centralized operational management of liquidity risk. BHW Bausparkasse AG and its foreign subsidiaries in New York and Luxembourg manage their risks independently using uniform Postbank group-wide procedures and processes. In the event of a liquidity shock, the Liquidity Crisis Committee has clear responsibility and authority over all Postbank units responsible for portfolios as well as all portfolio units at its subsidiaries and foreign branches.

Postbank's overarching risk strategy encompasses its strategy for management of liquidity risk. The goal of liquidity management is to ensure that Postbank is solvent at all times – not only under normal conditions, but also in stress situations. Due to its strategic focus as a retail bank, Postbank enjoys a strong refinancing base in its customer business and is therefore relatively independent of the money and capital markets. To guard against unexpected cash outflows, an extensive portfolio consisting of unencumbered highly liquid and ECB-eligible securities is held that can be used to obtain liquidity rapidly through private markets or via regular central bank operations. To ensure the additional diversification of its refinancing activities, Postbank has a Pfandbrief license allowing it to issue public sector Pfandbriefe and mortgage Pfandbriefe.

At Postbank Liquidity Risk Controlling (until September 30, 2011, Market Risk Controlling) assesses the liquidity status of Postbank each business day on the basis of liquidity gap analyses and cash flow forecasts, with operational management of risk being performed on the basis of the liquidity status. Risk management is also based on a series of more far-reaching analyses of liquidity management, in addition to regular Postbank's Group-wide liquidity and issue planning and also includes regular stress testing. The stress test results as of year-end 2011 support the comfortable liquidity position of Postbank Group. Even under the combined stress impact of the extreme scenario a comfortable liquidity surplus can be observed. This is not least due to the stability of customer deposits and Postbank's extensive portfolio of ECB-eligible securities.

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## 12. Glossary

### A

#### Active Book Equity (ABE)

Active Book Equity is calculated by the Group in order to make it easier to compare itself with competitors as well as in order to refer to active book equity for several ratios. The shareholders' equity is adjusted for unrealized net gains on assets available for sale, fair value adjustments on cash flow hedges (both components net of applicable taxes), as well as dividends, for which a proposal is accrued on a quarterly basis and for which payments occur once a year following the approval by the Annual General Meeting.

#### Advanced Measurement Approach (AMA)

An operational risk measurement technique introduced under ► Basel 2 capital adequacy rules using an internal modeling methodology as a basis.

#### Alternative Assets/Investments

Direct investments in ► private equity, venture capital, ► mezzanine capital, real estate capital investments and investments in leveraged buyout funds, venture capital funds and ► hedge funds.

#### Asset-backed Securities

Particular type of securitized payment receivables in the form of tradable securities. These securities are created by the repackaging of certain financial assets (► securitization).

#### Average Active Equity

The Group calculates active equity to make comparisons to its competitors easier and refers to active equity in several ratios. However, active equity is not a measure provided for in ► IFRS and therefore the Group's ratios based on average active equity should not be compared to other companies' ratios without considering the differences in the calculation.

The items for which the Group adjusts average shareholders' equity are average accumulated other comprehensive income (loss) excluding foreign currency translation (all components net of applicable taxes), as well as average dividends, for which a proposal is accrued on a quarterly basis and which are paid after the approval by the Annual General Meeting following each year.

#### Average Expected Exposure (AEE)

One year time average of the average simulated positive future market values for a given portfolio of derivatives and/or securities financing transactions. This exposure measure follows internal credit line netting rules and reflects credit risk mitigation via margining and collateralization and is used as exposure measure within the calculation of ► economic capital.

### B

#### Back testing

A procedure used to verify the predictive power of the ► value-at-risk calculations involving the comparison of hypothetical daily profits and losses under the buy-and-hold assumption with the estimates from the value-at-risk model.

#### Basel 2

Recommendations for international capital adequacy standards adopted by the Basel Committee on Banking Supervision, widely referred to as Basel 2 capital framework, which aligns capital requirements more closely with the underlying risks.

#### Basel 2.5

Proposals of the Basel Committee on Banking Supervision originally dated July 2009 for the reform of the Basel framework in the wake of the financial crisis. The minimum capital requirements mainly comprise the introduction of new measures for ► market risk in addition to ► value-at-risk: ► Stressed value-at-risk,

► incremental risk charge, the ► comprehensive risk measure for the ► correlation trading portfolio consisting of specific securitization positions and the application of the ► market risk standardized approach for trading book securitizations and ► nth-to-default credit derivatives. Further requirements contain governance, risk management and compensation standards as well as disclosure requirements focusing on ► securitizations. On the level of the European Union, Basel 2.5 has been implemented in the Capital Requirements Directives (CRD) 2 and 3.

#### Basel 3

Revision of the international capital adequacy standards adopted by the Basel Committee on Banking Supervision which was endorsed by the G20 summit in November 2010. Aim of the revision is to strengthen global capital and liquidity rules promoting a more resilient banking sector. During a transition period until 2019 the revised standards not only increase the minimum capital requirements for banks but also introduce an additional capital conservation buffer as well as a bank specific countercyclical capital buffer. Basel 3 will also introduce an internationally harmonized liquidity framework for the first time with strict short- and long-term ratios. The new rules will be adopted into German law by means of the ► German Solvency Regulation.

#### Business Risk

Risk that arises from potential changes in general business conditions, such as market environment, client behavior and technological progress, which can affect the Group's earnings if the Group is unable to adjust quickly to them.

## C

### Clearing

The process of transmitting, reconciling and, in some cases, confirming payment orders.

### Commercial Mortgage-backed Securities (CMBS)

► Mortgage-backed securities (MBS), which are backed by commercial mortgage loans.

### Comprehensive Risk Measure

Measure of potential losses for ► nth-to-default credit derivatives and ► securitizations within the ► correlation trading portfolio that will not be exceeded with a probability of 99.9% during a 1-year portfolio holding period. The comprehensive risk measure is effective since December 31, 2011, and may be used subject to supervisory approval. It is based on an internal model and must capture all price risk. The capital requirement resulting from the comprehensive risk measure is floored at 8% of the capital requirement that would result from the market risk standardized approach for the respective portfolio.

### Confidence Level

In the framework of ► value-at-risk and ► economic capital the level of probability that the actual loss will not exceed the potential loss estimated by the ► value-at-risk or ► economic capital number.

### Correlation Trading Portfolio

The correlation trading portfolio comprises ► securitizations and corresponding hedges that fulfill strict eligibility criteria regarding the securitized portfolio and liquidity in the trading book. The correlation trading portfolio may be exempt from application of the ► market risk standardized approach. Capital requirements for the correlation trading portfolio are instead based on the ► comprehensive risk measure.

### Country Risk

The risk that the Group may suffer a loss, in any given country, due to deterioration in economic conditions, political and social unrest, nationalization and expropriation of assets, government repudiation of external indebtedness, exchange controls and currency depreciation or devaluation.

### Credit Conversion Factor (CCF)

A multiplier that is used to convert off-balance-sheet items into credit exposure equivalents. Within the advanced IRBA the Group applies specific CCFs in order to calculate an ► Exposure at Default (EAD) value. In instances in which 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 current utilization.

### Credit Derivatives

Financial instruments which transfer ► credit risk connected with loans, bonds or other ► risk-weighted assets or market risk positions to parties providing protection. This does not alter or reestablish the underlying credit relationship of the original risktakers (parties selling the credit risks).

### Credit Risk

Risk that customers may not be able to meet their contractual payment obligations. Credit risk includes ► default risk, ► country risk and settlement risk.

### Credit Risk Exposure

All transactions in which losses might occur due to the fact that counterparties may not fulfill their contractual payment obligations. The Group generally calculates credit risk exposure as the gross amount of the exposure without taking into account any collateral, other credit enhancement or credit risk mitigating transactions.

### Credit Support Annexes (CSA)

Annexes to master ► netting agreements that are used for documenting collateral arrangements between parties trading OTC (over-the-counter) derivatives. CSA's provide derivatives-related credit risk mitigation through periodic margining of the covered exposure.

### Current Exposure Method

An approach to calculate the regulatory ► Exposure at default of derivative counterparty credit risk exposures as the current market value of the derivative plus an add-on amount which takes into account the potential future increase of the market value.

### Custody

Custody and administration of securities as well as additional securities services.

## D

### Default Risk

The risk that counterparties fail to meet their contractual payment obligations.

### Derivatives

Financial instruments whose value derives largely from the price, price fluctuations and price expectations of an underlying instrument (e.g. share, bond, foreign exchange or index). Derivatives include ► swaps, ► options and ► futures.

## E

### Economic Capital

A figure which states with a high degree of confidence the amount of equity capital the Group needs at any given time to absorb unexpected losses arising from current ► exposures.



### Equity Method

Valuation method for investments in companies over which significant influence can be exercised. The pro-rata share of the company's net income (loss) increases (decreases) the carrying value of the investment affecting net income. Distributions decrease the carrying value of the investment without affecting net income.

### Expected Loss (EL)

Measurement of loss that can be expected within a one-year period from ► credit risk and ► operational risk based on historical loss experience.

### Expected Positive Exposure (EPE)

One year time average of the monotonically increasing average simulated positive future market values for a given portfolio of derivatives and/or securities financing transactions. This exposure measure follows external regulatory netting rules and credit risk mitigation via margining and collateralization and is used as exposure measure within the calculation of regulatory capital under the ► Basel 2 ► Internal Model Method.

### Exposure

The amount which the bank may lose in case of losses incurred due to risks taken, e.g. in case of a borrower's or counterparty's default.

### Exposure at Default (EAD)

The expected amount of the credit exposure to a counterparty at the time of a default.

### Exposure Class

Asset classes such as governments, corporates or retail, which are defined by the ► German Solvency Regulation within each credit risk measurement approach, that is ► standardized and ► internal ratings based approach.

## F

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### Fair Value

Amount at which assets or liabilities would be exchanged between knowledgeable, willing and independent counterparties, other than in a forced or liquidation sale.

### Foundation IRBA

A sophisticated approach available under the ► German Solvency Regulation for calculation of the ► regulatory capital requirements for risk positions allowing use of internal rating methodologies while loss rates and ► credit conversion factors are preset by the regulators.

### Futures

Forward contracts standardized with respect to quantity, quality and delivery date, in which an instrument traded on the money, capital, precious metal or foreign exchange markets is to be delivered or received at an agreed price at a certain future time. Cash settlement is often stipulated for such contracts (e.g. futures based on equity indices) to meet the obligation (instead of delivery or receipt of securities).

## G

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### German Solvency Regulation

German regulation governing the capital adequacy of institutions, groups of institutions and financial holding groups which adopted the revised capital framework of the Basel Committee from 2004 with further amendments in 2009, widely referred to as ► Basel 2.5, into German law.

## H

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### Hedge Fund

A fund whose investors are generally institutions and wealthy individuals. Hedge funds are part of ► alternative investments. They are subject to less stringent or no regulatory obligations and can therefore employ strategies which mutual funds are

not permitted to use, e.g. strategies involving short selling, leveraging and ► derivatives. Hedge funds offer chances for high profits but also bear the risk of losing invested capital, thus their returns are uncorrelated with traditional investment returns.

## I

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### ICAAP

ICAAP (Internal Capital Adequacy Assessment Process) requires banks to identify and assess risks, maintain sufficient capital to face these risks and apply appropriate risk-management techniques to ensure capital adequacy on an ongoing basis, i.e. internal capital supply to exceed internal capital demand. Internal capital adequacy is defined under a "gone concern" approach.

### IFRS (International Financial Reporting Standards)/Previously IAS (International Accounting Standards)

Financial Reporting Rules of the International Accounting Standards Board designed to ensure globally transparent and comparable accounting and disclosure. Main objective is to present information that is useful in making economic decisions, mainly for investors.

### Incremental Risk Charge

Measure of potential losses due to migration and default risk that are not fully reflected in ► value-at-risk and will not be exceeded with a probability of 99.9% assuming a 1-year risk horizon. The incremental risk charge was introduced on December 31, 2011, and applies to non-securitization positions subject to specific interest rate risk in the trading book.

### Internal Assessment Approach (IAA)

Internal credit assessment approach used in the calculation of regulatory capital requirements for non-externally rated securitization positions in relation to ABCP conduits.

### Internal Model Approach

Subject to regulatory permission, the usage of internal ► value-at-risk models to calculate the regulatory capital requirement for market risk positions.

### Internal Model Method (IMM)

A more sophisticated approach for calculating a regulatory exposure value (► Exposure at Default) for derivative counterparty exposures as well as securities financing transactions by building the calculations on a Monte Carlo simulation of the transactions' potential future market values.

### Internal Ratings Based Approach (IRBA)

The most sophisticated approach available under the ► German Solvency Regulation for calculation of the ► regulatory capital requirements for risk positions allowing to use internal rating methodologies as well as internal estimates of specific other risk parameters including the ► probability of default (PD) and the ► loss given default (LGD) driving the regulatory risk-weight and the ► credit conversion factor (CCF) as part of the regulatory ► exposure at default (EAD) estimation.

## L

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### Liquidity Risk

The risk arising from the Group's potential inability to meet all payment obligations when they come due or only being able to meet these obligations at excessive costs.

### Loss Distribution Approach

A risk profile modeling technique, which mainly uses loss data to construct aggregate loss distributions based on Monte Carlo simulations.

### Loss Given Default (LGD)

The likely loss intensity in case of a counterparty default. Its estimation represents, expressed as a percentage, the part of the ► exposure that cannot be recovered in a default event and therefore captures the severity of a loss.

## M

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### Market Risk

The risk that arises from the uncertainty concerning changes in market prices and rates (including interest rates, equity prices, foreign exchange rates and commodity prices), the correlations among them and their levels of volatility.

### Market Risk Standard Approach

The market risk standardized approach applies to ► nth-to-default credit derivatives and ► securitizations in the ► trading book. The only exemption from the use of the standardized approach applies to the ► correlation trading portfolio, for which an internal model, the ► comprehensive risk measure, may be used subject to supervisory approval.

### Mezzanine

Flexible, mixed form of financing comprising equity and debt capital. Here: long-term subordinated financing instrument used to finance growth while at the same time strengthening the borrower's economic equity capital base.

### Monte Carlo Simulation

Monte Carlo methods are used to value and analyze (complex) instruments, portfolios and investments by simulating the various sources of uncertainty affecting their value, and then determining their average value over the range of resultant outcomes.

### Mortgage-backed Securities (MBS)

► Asset-backed securities, which are backed by mortgage loans. Subcategories are ► residential mortgage-backed securities (RMBS) and ► commercial mortgage-backed securities (CMBS).

## N

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### Netting Agreements

Bilateral agreements between the Group and its counterparties with regard to the included transactions which ensure that, if solvency or bankruptcy proceedings are initiated, only a single net amount is owed by one party to the other from the netting of all claims and liabilities.

### Nth-to-default credit derivatives

Financial ► derivatives whose payoffs are linked to the number (N) of defaults in a pool of securities or reference entities. Once the specified number of defaults is reached, the contract terminates and potential claims under the contract are settled.

## O

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### Operational Risk

Potential for incurring losses in relation to employees, contractual specifications and documentation, technology, infrastructure failure and disasters, external influences and customer relationships. This definition includes legal and regulatory risk, but excludes ► business and ► reputational risk.

### Option

Right to purchase (call option) or sell (put option) a specific underlying (e.g. security or foreign exchange) from or to a counterparty (option seller) at a predetermined price on or before a specific future date.

### OTC Derivatives

Non-standardized financial instruments (► derivatives) not traded on a stock exchange, but directly between market participants (over-the-counter).

## P

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### Portfolio

In general: part or all of one or all categories of assets (e.g. securities, loans, equity investments or real estate). Portfolios are formed primarily to diversify risk. Here: combination of similar transactions, especially in securities and/or ► derivatives, under price risk considerations.

### Potential Future Exposure

Time profile of the 95th percentile of simulated positive market values for a given portfolio of derivatives and/or securities financing transactions including the effect of ► netting agreements and collateral – calculated over the portfolio's entire lifetime.

### Prime Brokerage

Suite of products including ► clearing and settlement, ► custody, reporting, and financing of positions for institutional investors.

### Private Equity

Equity investment in non-listed companies. Examples are venture capital and buyout funds.

### Probability of Default (PD)

The likelihood or probability of default (PD) of a counterparty is assessed over the next twelve months time horizon and expressed as a percentage. The Group does not rate through the cycle. PD is the primary measure of creditworthiness of a counterparty. The numerical probabilities of default are mapped into a 26-grade rating scale that is similar to rating scales widely used by international rating agencies.

## R

### Rating

The result of the objective assessment of the future economic situation – namely the default probability – of counterparties based on present characteristics and assumptions. The methodology for the rating assignment strongly depends on the customer type and the available data. A broad range of methodologies for the assessment of the ► credit risk is applied, such as expert systems and econometric approaches.

### Regulatory Capital

Capital for banks recognized for regulatory purposes according to the Basel Capital Adequacy Accord of 2004 with further amendments in 2009. Capital according to ► Basel 2.5 consists of:

– Tier 1 capital: primarily share capital, reserves and certain ► trust preferred securities,

– Tier 2 capital: primarily participatory capital, cumulative preference shares, long-term subordinated debt and unrealized gains on listed securities,

– Tier 3 capital: mainly short-term subordinated debt and excess Tier 2 capital.

Tier 2 capital is limited to 100 % of Tier 1 capital and the amount of long-term subordinated debt that can be recognized as Tier 2 capital is limited to 50 % of Tier 1 capital.

### Regulatory Capital Ratio

Key figure for banks expressed as a percentage ratio of ► regulatory capital to the overall regulatory risk position, comprised of ► credit, ► market and ► operational risks according to Basel 2.5. The minimum capital ratio to be complied with is 8 %.

### Regulatory Trading Book and Banking Book

The regulatory trading book is defined in Section 1a of the German Banking Act. It consists of financial instruments and commodities held with trading intent or held for the purpose of hedging the ► market risk of other trading book positions; repurchase transactions, lending transactions and similar transactions which relate to trading book positions; name-to-follow transactions; and receivables directly related to trading book positions. Financial instruments and com-

modities assigned to the trading book must be tradable or able to be hedged. The regulatory banking book comprises all positions that are not assigned to the trading book.

### Reputational Risk

Risk that publicity concerning a transaction, counterparty or business practice involving a client will negatively impact the public's trust in the Group.

### Residential Mortgage-backed Securities (RMBS)

► Mortgage-backed securities (MBS), which are backed by residential mortgage loans.

### Risk-weighted Assets (RWA)

Risk-weighted assets are positions that carry ► credit, ► market and/or ► operational risk, weighted according to regulatory requirements. RWAs are regulatory capital requirements multiplied by 12.5, or in other words, capital requirements equal 8 % of RWA.

## S

### Securitization

Creation of tradable securities from loan claims, deposit positions (i.e. future cash flows) and ownership rights in the wider sense. Examples of securitized rights are ► asset-backed securities and ► mortgage-backed securities (MBS). Rights are often evidenced through so-called SPEs (special purpose entities), companies whose sole purpose is to issue these securities and whose assets are the ownership interests in the company.

### Standardized Approach

The least sophisticated approach available under the ► German Solvency Regulation for the calculation of the ► regulatory capital requirements. It measures ► Credit risk either pursuant to fixed risk weights, which are predefined by regulation or through the application of external ► ratings.

### Stressed Value-at-Risk

Measure of potential losses due to ► market risk under stressed market conditions that will not be exceeded with a probability of 99 % within a portfolio holding period of 10 days. Stressed value-at-risk must be calculated by banks using internal models for the determination of ► market risk and is effective since 31 December 2011. The measure is calculated using the ► value-at-risk model. In contrast to ► value-at-risk that uses model parameters based on current market conditions, stressed value-at-risk uses parameters that reflect a continuous one-year stress period relating to significant losses for the bank.

### Swaps

In general: exchange of one payment flow for another. Interest rate swap: exchange of interest payment flows in the same currency with different terms and conditions (e.g. fixed or floating). Currency swap: exchange of interest payment flows and principal amounts in different currencies.

## T

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### Trust Preferred Securities

Hybrid capital instruments characterized by profit-related interest payments. Under banking supervisory regulations they are part of Tier 1 capital if interest payments are not accumulated in case of losses (non-cumulative trust preferred securities) and if the instruments do not have a stated maturity date or if they are not redeemable at the option of the holder. Otherwise they are included in Tier 2 capital (for example cumulative trust preferred securities).

## V

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### Value-at-risk

For a given ► portfolio, the value-at-risk is an estimate of the potential future loss (in terms of market value) that, under normal market conditions, will not be exceeded in a defined period of time and with a defined ► confidence level.

## W

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### Wrong Way Risk

Risk that occurs when exposure to a counterparty is adversely correlated with the credit quality of that counterparty.

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## 13. Imprint

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Pillar 3 Report 2011,  
Annual Review 2011 and  
Financial Report 2011 on the Internet:  
[www.db.com/ir/en/content/reports\\_2011.htm](http://www.db.com/ir/en/content/reports_2011.htm)

### Cautionary statement regarding forward-looking statements

This report contains forward-looking statements. Forward-looking statements are statements that are not historical facts; they include statements about the Group's beliefs and expectations and the assumptions underlying them. These statements are based on plans, estimates and projections as they are currently available to the management of Deutsche Bank. Forward-looking statements therefore speak only as of the date they are made, and undertake no obligation to update publicly any of them in light of new information or future events.

By their very nature, forward-looking statements involve risks and uncertainties. A number of important factors could therefore cause actual results to differ materially from those contained in any forward-looking statement. Such factors include the conditions in the financial markets in Germany, in Europe, in the United States and elsewhere from which the Group derives a substantial portion of its trading revenues, potential defaults of borrowers or trading counterparties, the implementation of its management agenda, the reliability of its risk management policies, procedures and methods, and other risks referenced in the filings with the U.S. Securities and Exchange Commission. Such factors are described in detail in the Group's SEC Form 20-F of 20 March 2012 in the section "Risk Factors". Copies of this document are available upon request or can be downloaded from [www.deutsche-bank.com/ir](http://www.deutsche-bank.com/ir).



