

# Disclosure Report 2012

Disclosure in accordance with the German Solvency Regulation as at 31 December 2012

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# Introduction

Commerzbank Aktiengesellschaft is Germany's second largest bank and one of its leading banks for private and corporate customers. Our customers have one of the densest networks of any private-sector bank in Germany at their disposal. Commerzbank serves a total of around 14 million private customers and 1 million business and corporate customers worldwide. Commerzbank aims to continue strengthening its position as market leader in the private and corporate customer segments in Germany.

The focus of our activities is on the four core segments: Private Customers, Mittelstandsbank, Corporates & Markets and Central & Eastern Europe. The Bank has merged all activities in commercial real estate and ship financing, in addition to public finance, into the new Non-Core Assets run-off segment, which was created in mid-2012.

All staff and management functions are contained in Group Management: Group Audit, Group Communications, Group Compliance, Group Development & Strategy, Group Finance, Group Finance Operations, Group Human Resources, Group Investor Relations, Group Legal, Group Treasury and the central risk functions. On 1 September 2012 the Coordination and Tracking Office was set up as a cross-divisional functional unit to coordinate the Bank's cost and income management and monitor its progress. The support functions are provided by Group Services. These include Group Banking Operations, Group Markets Operations, Group Information Technology, Group Organisation, Group Security and Group Support. The Commerzbank Excellence programme has been set up under the joint leadership of Group Management and Group Services. The staff, management and support functions are combined in the Others and Consolidation division for external reporting purposes.

On the domestic market, Commerzbank Aktiengesellschaft is headquartered in Frankfurt am Main, from where it manages a nationwide branch network through which all customer groups are served. Its major German subsidiaries are comdirect bank AG, Commerz Real AG and Hypothekenbank Frankfurt AG (formerly Eurohypo AG). Outside of Germany, the Bank has 7 larger subsidiaries, 23 operational foreign branches and 35 representative offices in 53 countries and is represented in all major financial centres, such as London, New York, Tokyo, Hong Kong and Singapore. However, the focus of the Bank's international activities is in Europe.

At year-end 2012, Commerzbank Group employed 53,601 members of staff. This was a decrease of 4,559 employees compared to year-end 2011.

A detailed description of Commerzbank Group is given in the Annual Report 2012. Information on Commerzbank's remuneration system is given in the Remuneration Report 2012 in accordance with the Banking Remuneration Regulation (Instituts-Vergütungsverordnung) and in the section Remuneration Report of the Annual Report 2012.

## Objectives of the Disclosure Report

In this report Commerzbank AG as the ultimate parent company of the regulated banking group as defined by section 10a.1 sentence 1 of the German Banking Act (Kreditwesengesetz – KWG) is complying with the disclosure requirements of section 26a.1 KWG in conjunction with sections 319 to 337 of the German Solvency Regulation (Solvabilitätsverordnung SolvV) as at the reporting date 31 December 2012.

This report is intended to give the reader a detailed insight into Commerzbank's current risk profile and risk management. In particular, it contains information on:

- Commerzbank Group's structure from both a regulatory and accounting perspective.
- The Group's capital structure.
- Commerzbank Group's general risk management system.
- The Group's risk management in respect of specific types of risk.

The report may also be seen as complementary to the Annual Report pursuant to the German Commercial Code (Handelsgesetzbuch – HGB), as it – in contrast to the Annual Report - primarily focuses on the supervisory perspective.

## Scope

The basis for this Disclosure Report is the group of companies consolidated for regulatory purposes. The companies consolidated for regulatory purposes only include those carrying out banking and other financial business. Pursuant to section 10a KWG, the consolidated group consists of a domestic parent company and its affiliated companies. The aim of regulatory consolidation is to prevent multiple use of capital that in fact exists only once by subsidiary companies in the financial sector. The companies consolidated under IFRS, by contrast, comprise all the companies controlled by the ultimate parent company.

In the context of the solvability requirements (section 26a KWG in connection with sections 319 ff. SolvV) besides the Disclosure Report itself, all policies and processes have to be documented as a main component to fulfil the pillar 3 requirements. The appropriateness and practicality of the institute's solvability practice has to be verified regularly. For this purpose Commerzbank has defined guidelines for the solvability report which regulate the overarching, strategic part of the internal instructions. The operative targets and responsibilities are defined in addition in separate documents.

The Disclosure Report is being updated and published on a yearly basis. In accordance with the materiality principle set out in section 26a.2 KWG in conjunction with section 320.1 SolvV, this disclosure relates to the largest entities within Commerzbank Group. This enables the Disclosure Report to focus on the information that is most material.

To obtain a uniform definition of materiality throughout the Group, subsidiaries classified as material during the annual risk inventory will be included in the Disclosure Report from 2012 onwards. As an additional condition, it must be ensured that 95% coverage is complied with for credit risk, market risk and operational risk of the entire Commerzbank Group. If coverage falls below 95%, other subsidiaries will be brought into the group of consolidated companies in order of exposure.

As a result of the new definition of materiality, the following entities which appeared as consolidated companies in the 2011 Disclosure Report no longer appear in the 2012 report: Commerzbank International S.A. (CISAL), Commerzbank SAO, Commerzbank Zrt., Commerz Markets LLC, Commerz Finanz GmbH and Commerzbank Holdings (UK) Ltd. Others also no longer included are: Bank Forum (stake sold in 2012), Commerz Europe (Ireland) (banking licence returned in 2012) and Deutsche Schiffsbank AG (integrated into Commerzbank AG). Material companies in addition to Commerzbank AG are:

- BRE Bank SA,
- comdirect bank AG,
- Commerz Real AG,
- Erste Europäische Pfandbrief- und Kommunalkreditbank AG in Luxembourg (EPPK) and
- Hypothekbank Frankfurt AG (formerly Eurohypo AG, renamed in 2012).

These six companies account for at least 95% of the Commerzbank Group's total capital adequacy requirement, and the 95% condition is also met in each case for individual types of risk.

The information in this Disclosure Report generally relates to the six consolidated entities listed above. Where this is not the case (e.g. with regard to the capital structure), it is explicitly stated. For selected indicators we are also providing prior-year figures. However the group of consolidated companies has not been restated retroactively for the prior year figures. All entities are fully consolidated both in accordance with IFRS and from a supervisory perspective.

## Waiver rule pursuant to section 2a.1 KWG

The waiver rule pursuant to section 2a.1 KWG allows subsidiary companies in a banking group to be exempted from the requirements relating to capital adequacy, large loan exposures and internal control systems at single-entity level provided that among others both the parent and the subsidiary company have their registered office in Germany.

This rule is based on the assumption that the subsidiary is closely integrated within the group structure. This is assumed to be the case if the parent company has a controlling interest in the subsidiary company<sup>1</sup>. In addition, the company being exempted must be closely integrated into the group-wide risk management and controlling processes of the parent company.

<sup>1</sup> A controlling interest exists in accordance with section 2a.1.1 KWG if the parent company either holds a majority of the subsidiary's voting rights or has the right to appoint the majority of its management.

Hypothesenbank Frankfurt AG and comdirect bank AG are fully integrated into the internal processes and risk management of Commerzbank AG as the ultimate parent company of the banking group. This applies in particular to the methods used, risk management, monitoring of operations, management and reporting. The opportunity granted under the waiver rule pursuant to section 2a.1 KWG was used to exempt the two companies at single entity level from the above requirements.

Pursuant to section 2a.6 KWG, parent companies within the group of companies consolidated for regulatory purposes that have their registered office in Germany are also entitled to this exemption. The opportunity this offered for Commerzbank AG as the ultimate parent company of Commerzbank Group to be exempted from the requirements at single entity level has been utilised. In particular, Commerzbank AG is integrated in Commerzbank Group's management system and there are no legal or other obstacles to the transfer of capital to Commerzbank AG.

Application of the waiver rule has been reported to the Bundesbank and BaFin together with evidence of compliance with the requirements and is subsequently monitored and documented on occasion.

# Equity capital

## Capital structure

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Equity as reported in the financial statements is based on the specifications of the applicable accounting standards. In the case of the Commerzbank Group these are the International Financial Reporting Standards (IFRS). Capital for regulatory purposes, by contrast, is determined in accordance with the regulations of the KWG (Kreditwesengesetz). Equity capital is relevant for determining the adequacy of regulatory capital. It serves as a cushion against risks taken (especially default risk, operational risk and market risks) and thus has a guarantee and confidence-building function for bank creditors. It also safeguards the institutions' ability to do business on an ongoing basis.

Capital is composed of core capital (total Tier I) as defined in section 10.2a KWG, supplementary capital (Tier II) as defined in section 10.2b KWG and Tier III capital as defined in section 10.2c KWG. Core capital and supplementary capital together comprise the liable equity capital available to cover risks. The supplementary capital may not exceed the core capital. In the Commerzbank Group core capital, the qualitatively highest-ranking component of capital mainly consists of subscribed capital, reserves and silent participations. To determine Core Tier 1 capital hybrid capital components are deducted from the core capital. Supplementary capital primarily includes long-term subordinated liabilities as defined in section 10.2b.5 KWG. Tier III capital, viewed as a lower-quality component of capital, consists of short-term subordinated liabilities. Tier III capital may only be used to back market risks. Modified available capital consists of total liable capital (core capital plus supplementary capital) and Tier III capital minus the deduction items.

The German Banking Act and the Solvency Regulation, which implemented the Basel 2.5 Capital Accord in Germany, impose obligations on the German banks to maintain minimum capital ratios. Under them, banks are required to maintain a minimum ratio of capital to risk-weighted assets of 8% (total capital ratio). A minimum requirement of 4% applies for the ratio of Tier I capital to risk-weighted assets (Tier I capital ratio). The composition of the regulatory equity capital and the total capital ratios are shown in the following table:

Table 1: Equity structure

Equity position   €m	31.12.2012	31.12.2011
<b>Total core capital pursuant to sec. 10.2a KWG (total Tier I)</b>	<b>27,245</b>	<b>26,189</b>
Core capital without hybrid instruments (Core Tier I)	24,986	23,443
Subscribed capital	5,828	5,113
Capital reserve	11,681	11,158
Retained earning incl. distributable profit/loss and reserves for foreign currency conversion	8,714	8,406
Non-controlling interests	842	721
Other core capital - silent participation (SoFFin)	1,626	1,937
Items 100 % deducted from Tier I capital pursuant to sec. 10.2a sentence 2 KWG	-3,049	-2,855
thereof intangible assets	-969	-950
thereof goodwill	-2,080	-1,905
50% deduction from Tier I capital pursuant to sec.10.2a, sentence 2 no. 6, KWG	-656	-1,037
thereof deductible investments in financial sector	-59	-159
thereof advance payment risk >5 days outstanding	-2	-6
thereof securitisation positions not risk weighted	-340	-872
thereof depreciation loss	-255	0
Other capital <sup>1</sup>	2,259	2,746
thereof unlimited and without incentive to redeem	1,370	1,632
thereof limited or with incentive to redeem	889	1,114
<b>Total supplementary capital pursuant to sec. 10.2b KWG (Tier II)</b>	<b>9,878</b>	<b>10,371</b>
Capital pursuant to sec. 10.5 KWG (former: profit sharing certificates)	731	726
Long-term subordinated liabilities pursuant to sec. 10.5a KWG	9,777	10,533
Eligible allowance surplus	0	88
Revaluation reserve/unrealised profits from securities positions	25	61
50% deduction from Tier II capital pursuant to sec. 10.2b.2, 10.6.and 6a KWG	-655	-1,037
thereof deductible investments in financial sector	-58	-159
thereof advance payment risk >5 days outstanding	-2	-6
thereof securitisation positions not risk weighted	-340	-872
thereof depreciation loss	-255	0
<b>Total Tier III capital pursuant to sec. 10.2c KWG</b>	<b>0</b>	<b>0</b>
<b>Modified available capital</b>	<b>37,123</b>	<b>36,560</b>
<b>Risk weighted assets</b>		
Default risk	174,584	189,763
Market risk	10,999	20,503
Operational risk	22,552	26,328
<b>Total</b>	<b>208,135</b>	<b>236,594</b>
<b>Capital ratios   %</b>		
Core Tier I capital ratio	<b>12.0</b>	<b>9.9</b>
Tier I capital ratio	<b>13.1</b>	<b>11.1</b>
Total capital ratio	<b>17.8</b>	<b>15.5</b>

<sup>1</sup> Core capital pursuant to KWG (old) and not adhering to new requirements but allowable until 2040 to a limited extend (grandfathering pursuant to section 64m.1 KWG).



For Commerzbank as a banking group as defined in section 10a KWG the capital relevant to the determination of regulatory capital is based on the consolidated financial statements under IFRS. To reconcile the requirements for regulatory capital with the slightly different amounts reported in the financial statements, capital as determined under IFRS was adjusted with the aid of so-called prudential filters. The prudential filters are used in accordance with the Consolidated Financial Statements Reconciliation Regulation<sup>1</sup>.

**Table 2: Reconciliation of reported equity with eligible capital**

31.12.2012 €m	Core Tier I capital	Hybrid capital	Total Tier I capital	Tier II capital	Total capital
Reported in balance sheet	27,034	–	27,034	12,316	39,350
Revaluation reserve	1,699		1,699		1,699
Cash flow hedge reserve	616		616		616
Non-controlling interests not to be shown in core capital, changes in consolidated companies and goodwill	–1,961		–1,961		–1,961
Intangible assets	–969		–969		–969
Other capital subject to a 15% limit		889	889		889
Other capital subject to a 35% limit		1,370	1,370		1,370
Reclassification from silent participations to other capital	–750	–	–750		–750
Parts of subordinated capital not eligible due to limited residual term			–	–1,146	–1,146
Latent revaluation reserves for securities	–		–	25	25
Other differences	–683		–683	–1,317	–2,000
<b>Regulatory stated capital</b>	<b>24,986</b>	<b>2,259</b>	<b>27,245</b>	<b>9,878</b>	<b>37,123</b>

In contrast to the materiality principle that applies in general in this Disclosure Report, where information is presented in respect of the six largest units within the Commerzbank Group, the capital structure table shows the equity capital of all of the companies consolidated for regulatory purposes. This is in order to provide an overview of the entire capital available within the Group. These own funds form the basis for determining the level of capital adequacy reported to the Bundesbank.

## Characteristics of equity instruments

Own funds raised externally are described as equity instruments. Commerzbank Group uses various instruments to raise and manage its capital.

In contrast to the equity structure table 1, the following tables do not take account of the impact of the revaluation effects resulting from the purchase price allocation at the time of the Dresdner Bank integration on the individual equity instruments.<sup>2</sup>

<sup>1</sup> The Consolidated Financial Statements Reconciliation Regulation (Konzernabschlussüberleitungsverordnung) dated 22 July 2009.

<sup>2</sup> Details on revaluation effects may be found in the Annual Report 2009.

Equity instruments are accounted for at amortised cost. Premiums and discounts are recognized under net interest income over the lifetime of the instrument.

### **Subscribed capital**

As at 31 December 2012, the subscribed capital (share capital) of Commerzbank AG amounted to €5.8bn and was divided into 5,829,513,857 no-par-value bearer shares (accounting par value per share of €1.00). The number of shares increased by 716,084,804 compared to last year.

In March 2012 Commerzbank AG increased its share capital by €360.5m through the issue of 360,509,967 new no-par-value bearer shares with an accounting par value of €1.00 per share from Authorised Capital 2011 for non-cash contributions, with shareholders' preemptive rights excluded. The Financial Market Stabilisation Fund (SoFFin) converted part of its silent participation of over €230.8m into 120,169,989 shares in order to maintain its stake in Commerzbank at 25% plus one share.

In July 2012, Commerzbank also met individual variable remuneration claims of its non-pay-scale employees amounting to €214m in Commerzbank shares. Claims from the 2011 variable remuneration of Commerzbank Group employees were thus transferred in the relevant amount as a contribution in kind, which immediately strengthened Core Tier 1 capital. SoFFin subsequently converted a portion of its silent participations into shares in order to maintain its stake in Commerzbank. Thus a portion of the silent participations with a nominal value of around €80.1m was converted into 58,851,212 shares.

There are no preferential rights or restrictions on the payment of dividends at Commerzbank AG. All shares in issue are fully paid up.

### **Other core capital – silent participations (SoFFin)**

The Financial Market Stabilisation Fund (SoFFin) acquired silent participations in Commerzbank of €8.2bn each at 31 December 2008 and 4 June 2009 respectively. These silent participations were reduced by €14.5bn from €16.4bn to €1.9bn during 2011 through a number of capital measures. The silent participations decreased further in 2012 to €1.6bn through the aforementioned conversions into shares.

The conditions for the payment of the fixed interest rate were met in 2012 and the resulting expense amounted to €153.7m (previous year: 0 €m). The silent participations have an indefinite term.

### **Other capital**

Hybrid financial instruments (other capital) are a hybrid between debt and equity, enabling investors to find an optimal balance between the desire to take on risk and the desire to bind the company's management.

In the financial year 2012 interest of €126m (previous year: €152m) was payable on hybrid capital. Hybrid capital forms part of the Bank's liable equity capital. Interest payments are due in accordance with the issue conditions of the instrument. The claims of holders of hybrid instruments to repayment of their capital are subordinate to the claims of creditors of the liabilities reported under subordinated liabilities and profit-sharing certificates.

In March 2012, part of the Trust Preferred Securities (TruPS) of the Commerzbank Capital Funding Trust I and II and the Eurohypo Capital Funding Trust I was repurchased. TruPS with a nominal value of €1.0bn were contributed as non-cash contributions against payment in shares. The redemption increased the Bank's Core Tier I capital by €0.8bn. Beyond this there were no significant changes. At the end of 2012, the following material hybrid financial instruments were in issue:

**Table 3: Material instruments of other capital**

Issue date	€m	m	currency	Issuer	Interest rate %	Maturity	Callable on
1999	758	1,000	USD	Dresdner Capital LLC I	8.151	2031	30.06.2029
2009	750	750	EUR	Commerzbank AG	9.000	unlimited	08.06.2014
2006	416	416	EUR	Commerzbank AG	5.386	unlimited	31.12.2016
2006	186	186	EUR	Commerzbank Capital Funding Trust III	2.524	unlimited	
2005	152	152	EUR	Eurohypo Capital Funding Trust II	3.486	unlimited	
2006	148	148	EUR	Commerzbank Capital Funding Trust I	5.012	unlimited	12.04.2016
2003	119	119	EUR	Eurohypo Capital Funding Trust I	6.445	unlimited	23.05.2013
2006	114	93	GBP	Commerzbank Capital Funding Trust II	5.905	unlimited	12.04.2018

### Long-term subordinated liabilities

The long-term subordinated liabilities are Tier II capital as defined by section 10.5a KWG. The claims of creditors to repayment of these liabilities are subordinate to those of other creditors. The issuer cannot be obliged to repay the liability before the maturity date. In the event of insolvency or winding-up, subordinated liabilities may only be repaid after the claims of all senior creditors have been met. Commerzbank has call options on some of its subordinated liabilities.

In 2012, the volume of subordinated liabilities maturing amounted to €1.1bn, redemptions to €0.1bn and new issues to €0.3bn. Beyond this there were no significant changes in the reporting year.

At the end of 2012, the following material long-term subordinated liabilities were outstanding:

**Table 4: Material long-term subordinated liabilities**

Issue date	€m	m	currency	Issuer	Interest rate %	Maturity
2011	1,254	1,254	EUR	Commerzbank AG	6.375	2019
2011	1,250	1,250	EUR	Commerzbank AG	7.750	2021
2007	600	600	EUR	Commerzbank AG	1.120 <sup>1</sup>	2017
2008	500	500	EUR	Commerzbank AG	6.250	2014
2006	492	492	EUR	Commerzbank AG	1.081 <sup>1</sup>	2016
2009	379	500	USD	Commerzbank AG	7.250	2015
2011	322	322	EUR	Commerzbank AG	5.000	2018
2011	300	300	EUR	Commerzbank AG	5.000	2018
2003	250	250	EUR	Hypothesenbank Frankfurt AG <sup>2</sup>	5.000	2016
2009	250	250	EUR	Commerzbank AG	5.000	2017
2006	228	300	CAD	Commerzbank AG	2.159 <sup>1</sup>	2016
2003	220	220	EUR	Hypothesenbank Frankfurt AG <sup>2</sup>	5.000	2014
2007	196	196	EUR	Commerzbank AG	2.039	2017
1999	184	150	GBP	Commerzbank AG	6.625	2019
2012	177	177	EUR	Commerzbank AG	10.000	2017
2012	170	170	EUR	Commerzbank AG	9.500	2019

<sup>1</sup> Floating interest rate.

<sup>2</sup> Formerly Eurohypo AG.

## Capital pursuant to section 10.5 KWG

Capital pursuant to section 10.5 KWG forms part of the Bank's liable equity. This component of capital participates in losses in full. The claim for redemption of capital may not be due in less than two years time. Interest payments are made only if the issuing institution achieves a distributable profit. The claims of holders to the repayment of principal are subordinate to those of other creditors. At the end of 2012, the following material capital instrument was in circulation:

**Table 5: Material capital pursuant to section 10.5 KWG**

Issue date	€m	m	currency	Issuer	Interest rate %	Maturity
2006	662	662	EUR	Commerzbank AG	5.386	2015

Restrictions on or significant obstacles to the transfer of funds or equity over and above those contained in German law or EU directives currently exist within Commerzbank Group only to a limited extent. In specific cases capital transfers to entities belonging to the Group are subject to prior consent by the supervisory authorities.

## Capital requirements

Capital requirements and the resulting total and accordingly core capital ratios are calculated for all entities that are not exempted from calculating capital adequacy at single-entity level under the waiver rule pursuant to section 2a.1 and 2a.6 KWG. The institutions subject to the waiver, as aforesaid, are Commerzbank AG, Hypothekenbank Frankfurt AG and comdirect bank AG, although Hypothekenbank Frankfurt AG as a separate sub-group is required to report for the Hypothekenbank Frankfurt Group. In addition, Commerz Real AG as financial company is exempted from calculating its capital ratios.

### Capital ratios of material Group entities

The capital requirements and capital ratios are shown in the table at sub-group level.

**Table 6: Capital ratios of material Group entities**

Company	Capital requirements €m	Total capital ratio %	Core capital ratio %
Hypothekenbank Frankfurt AG	3,239	19.7	16.9
Erste Europäische Pfandbrief- und Kommunalkreditbank AG	91	30.6	29.4
BRE Bank SA	1,212	18.7	13.0

The above table shows that all relevant entities are currently reporting an adequate total and core capital base. The total capital ratio gives the ratio of total eligible capital to the sum of amounts charged for default, market and operational risks multiplied by 12.5. The core capital ratio relates the core capital to the sum of amounts charged for default, market and operational risks multiplied by 12.5.

There was no under-capitalisation of subsidiaries subject to the deduction method during the period under review.

### Capital requirements by risk type

The capital requirements set out here relate to the six material consolidated units included in this disclosure and the figures are the same with regard to content as in the capital adequacy reports submitted to the Deutsche Bundesbank under Basel 2.5 Pillar 1.

The regulatory capital requirements as well as the risk weighted assets (RWA) are shown for each risk type, broken down into the different calculation approaches:

Table 7: Capital requirements and risk weighted assets by risk type

€m	31.12.2012		31.12.2011	
	Capital requirements	Risk weighted assets	Capital requirements	Risk weighted assets
<b>Default risks</b>	<b>13,384</b>	<b>167,301</b>	<b>14,987</b>	<b>187,333</b>
<b>Standardised Approach to Credit Risk (SACR)</b>	<b>1,947</b>	<b>24,335</b>	<b>3,928</b>	<b>49,100</b>
Central governments	7	84	26	326
Regional governments and local authorities	14	170	17	216
Other public sector bodies	60	756	70	871
International organisation (as defined by SolvV)	0	0	0	0
Banks	105	1,312	298	3,723
Multilateral development banks	0	2	0	0
Companies	782	9,775	2,021	25,258
Exposures secured by real estate property	212	2,653	334	4,174
Retail banking	442	5,520	698	8,722
Debt instruments backed by banks	4	53	7	88
Investment fund shares	140	1,747	83	1,042
Other exposures	76	948	162	2,031
Overdue exposures	105	1,315	212	2,649
<b>Advanced approach (IRBA)</b>	<b>10,980</b>	<b>137,248</b>	<b>10,392</b>	<b>129,899</b>
Central governments	430	5,377	518	6,479
Banks	1,657	20,718	1,848	23,094
Companies	7,654	95,675	6,948	86,856
Retail banking: sub-class IRBA exposures secured by mortgage liens	688	8,594	474	5,925
Retail banking: other IRBA exposures	343	4,288	388	4,847
Retail banking: qualified revolving IRBA exposures	0	0	39	490
Other non-loan based assets	208	2,595	177	2,208
<b>Securitisation risks</b>	<b>318</b>	<b>3,975</b>	<b>481</b>	<b>6,016</b>
Securitised positions (IRBA)	318	3,975	481	6,016
thereof resecuritisations	95	1,183	109	1,358
<b>Investment risks</b>	<b>139</b>	<b>1,744</b>	<b>185</b>	<b>2,319</b>
Investments with method continuation (Grandfathering)	71	893	100	1,245
Standardised Approach	22	272	29	367
Temporarily or permanently excluded from IRBA exposures	46	579	57	706
<b>Market risks</b>	<b>871</b>	<b>10,890</b>	<b>1,638</b>	<b>20,471</b>
<b>Standardised Approach</b>	<b>50</b>	<b>630</b>	<b>86</b>	<b>1,072</b>
Interest rate risk	26	321	25	308
thereof general price risk	22	274	19	232
thereof specific price risk	4	46	6	76
Specific price risk securitisations in trading book	3	36	5	63
Currency risk	22	273	56	702
<b>Internal model approach</b>	<b>821</b>	<b>10,261</b>	<b>1,552</b>	<b>19,399</b>
<b>Operational risks</b>	<b>1,779</b>	<b>22,238</b>	<b>2,090</b>	<b>26,127</b>
<b>Basic Indicator Approach (BIA)</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>472</b>
<b>Advanced Measurement Approach (AMA)</b>	<b>1,779</b>	<b>22,238</b>	<b>2,052</b>	<b>25,655</b>
<b>Total</b>	<b>16,034</b>	<b>200,428</b>	<b>18,715</b>	<b>233,932</b>

Around 80% of the overall capital requirement relates to default risk positions as defined in section 9 SolvV. Default risks include balance sheet, off-balance sheet and derivative positions, as well as advance payment risk positions. Of the total capital requirement for default risks, €0.8bn relates to the trading book. Since the Solvency Regulation came into force Commerzbank has used the Advanced Internal Ratings Based Approach (advanced IRBA; in the following referred to as IRBA) to determine regulatory capital. Commerzbank has applied the partial use option permitted by the Solvency Regulation. Accordingly capital requirements are currently still calculated under the rules of the Standardised Approach to Credit Risk (SACR) for part of the portfolios. Assets affected include qualified revolving retail banking assets, such as overdraft facilities and credit card receivables. There is only an insignificant amount of processing risks (< €1m) as defined in section 15 SolvV within Commerzbank Group; accordingly no capital charge is shown for them.

Commerzbank Group and accordingly the group companies included in the disclosure report are, as IRBA banks as defined in section 71.4 SolvV, generally obliged to value investments in accordance with the IRBA rules. For investments entered into prior to 1 January 2008, Commerzbank has opted to apply grandfathering. These investment positions are temporarily excluded from the IRBA and treated in accordance with the SACR rules with a risk weighting of 100%. The SolvV also allows items to be permanently exempted from the IRBA. Since 31 December 2009 Commerzbank applies the partial use option pursuant to section 70 sentence 1 no. 9b SolvV and is using the SACR permanently to all investment positions which are not under the above-mentioned temporary grandfathering option.

Securitised positions in the banking book as well as counterparty risk positions from market value hedges in connection with securitisations also fall under the category of default risk positions subject to a capital requirement. Commerzbank treats these positions according to the IRBA rules for securitised positions. Capital deduction items of securitisations directly reduce the liable equity and thus are not included in the capital requirements.

In addition to default risk adequate capital must also be set aside for market risk positions pursuant to section 2.3 SolvV. In December 2011, the German Financial Supervisory Authority (BaFin) granted Commerzbank authorisation to use the internal market risk model for the calculation of regulatory capital. Capital requirements and risk weighted assets shown in table 7 are based on the certified model. This affects both the equity price and interest rate-related risk positions in the trading book. The standardised approaches are applied for smaller units in the Commerzbank Group and for total currency and commodity positions in accordance with the partial use option.

Capital amounting to €1.8bn has to be set aside for operational risks of the six material reporting entities. The Commerzbank Group uses an advanced measurement approach (AMA) to calculate the capital adequacy requirement for operational risk. In its letter of 30 June 2012, BaFin authorised the new AMA model for the regulatory calculation of the capital charge at Group level. This replaced the previously required parallel use of the old certified models of Commerzbank and Dresdner Bank. A few companies in the Group still use the basis indicator approach.

Notwithstanding the previous table showing capital requirements and risk weighted assets by risk type the development of the Group's risk-weighted assets by risk type and their main drivers is shown below:

**Table 8: Drivers of RWA changes during 2012**

<b>RWA   €bn</b>	<b>31.12.2012</b>	<b>RWA changes</b>	<b>31.12.2011</b>
<b>Credit risk</b>	<b>174.6</b>	<b>-15.2</b>	<b>189.8</b>
thereof volume effects		-17.6	
thereof default/recovery		-3.3	
thereof PD/Rating		5.2	
thereof collaterals/recovery factors		2.2	
thereof others		-1.6	
<b>Market risk</b>	<b>11.0</b>	<b>-9.5</b>	<b>20.5</b>
thereof VaR		-3.8	
thereof stressed VaR		-3.7	
thereof incremental risk		-1.6	
thereof others		-0.4	
<b>Operational risk</b>	<b>22.6</b>	<b>-3.8</b>	<b>26.3</b>
thereof effects of model approval		-4.3	
thereof effects of internal/external loss data		1.4	
thereof effects of risk scenario assessment		-1.1	
thereof effects of bonus-malus-value-system		0.4	
thereof others		-0.1	
<b>RWA total</b>	<b>208.1</b>	<b>-28.5</b>	<b>236.6</b>



# Risk-oriented overall bank management

Commerzbank defines risk as the danger of possible losses or profits foregone due to internal or external factors. In risk management we normally distinguish between quantifiable risks – those to which a value can normally be attached in financial statements or in regulatory capital requirements – and non-quantifiable types of risk such as reputational and compliance risk.

## Risk management organisation

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Risk management is an essential component of all Commerzbank business processes and is designed to support corporate management. Risks are identified, measured and then managed and monitored in line with the Bank's risk tolerance.

The Bank's Chief Risk Officer (CRO) is responsible for implementing the Group's risk policy guidelines for quantifiable risks laid down by the Board of Managing Directors. The CRO regularly reports to the Board of Managing Directors and the Risk Committee of the Supervisory Board on the overall risk situation within the Group.

Risk management activities used to be split between Credit Risk Management, Market Risk Management, Intensive Care and Risk Controlling and Capital Management, but Commerzbank's Board of Managing Directors approved changes to the organisational structure of risk management in October 2012 to meet the requirements of the Non-Core Assets (NCA) run-off segment. These involved the risk function separating the NCA portfolio's back office from that of the Core Bank. This means that in organisational terms, credit risk management for the NCA segment is merged across all rating levels into one unit. All areas have a structure which spans the Group and report directly to the CRO. The heads of the five risk management divisions together with the CRO make up the Risk Management Board within Group Management.

The Board of Managing Directors has sole responsibility for fundamental strategic decisions. The Board of Managing Directors has delegated the operational management of risk to committees. Under the relevant rules of procedure these are the Group Credit Committee, the Group Market Risk Committee, the Group OpRisk Committee and the Group Strategic Risk Committee, which decides on risk issues of an overarching nature. The CRO chairs all these committees and has the right of veto. In addition the CRO is a member of the Asset Liability Committee.

The Chairman of the Board of Managing Directors (CEO) bears responsibility for controlling risks related to the Bank's business strategy and reputational risks. The Chief Financial

Officer (CFO) assumes responsibility for controlling compliance risk with particular regard to investor protection, insider guidelines and money laundering.

Further details on risk management organisation can be found in the Annual Report 2012.

## Risk strategy and risk management

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The overall risk strategy, together with the business strategy, defines the strategic guidelines for the development of Commerzbank's investment portfolio. Furthermore, the risk appetite is set as the maximum risk that the Bank is prepared and able to accept while following its business objectives. The main aim is to ensure that the Group holds sufficient liquidity and capital. Based on these requirements, suitable limits for the capital and liquidity reserve available to the Group are defined.

Banks' core functions as transformers of liquidity and risk result in inevitable threats that can in extreme cases endanger the continued existence of the institution. For Commerzbank, the existential threats inherent in its business model include, for instance, the default of Germany, Poland, one of the other large EU countries (France, Italy, Spain or the United Kingdom) or the USA, a deep recession that lasts for several years with serious repercussions for the German economy or the collapse in the basic repo functionality of the ECB. When pursuing our business targets those risks are taken deliberately and lie outside the scope of the management defined within our Group risk strategy.

The overall risk strategy covers all material risks to which Commerzbank is exposed. It is detailed further in the form of sub-risk strategies for the risk types which are material. These are then specified and made operational through policies, regulations and instructions/guidelines. The annual risk inventory process ensures that all noticeable risks material to the Group are identified. The assessment of the materiality of a risk is based on whether its occurrence could have a major direct or indirect impact on the Bank's risk-bearing capacity.

As part of the planning process, the Board of Managing Directors decides the extent to which the risk coverage potential of the Group should be utilised. On that basis, individual types of risk are limited in a second stage. A capital framework is allocated to the management-relevant units through the planning process. Compliance with limits and guidelines is monitored during the year and action taken where required.

The avoidance of risk concentrations is one of the primary tasks of risk management. Risk concentrations can arise both from the synchronous movement of risk positions within a risk type (intra-risk concentrations), and through the synchronous movement of risk positions across differing risk types (through common risk drivers or interactions between different risk drivers of various risk types – inter-risk concentrations).

The establishment of risk management and controlling processes, which enable the identification, assessment, management, monitoring and communication of substantial risks and related risk concentrations, serves to ensure that all Commerzbank-specific risk concentrations are adequately accounted for. A major objective is to ensure early transparency regarding risk concentrations, and thus to reduce the potential risk of losses. Commerzbank uses a combination of portfolio and scenario analyses to manage and control Commerzbank-specific inter-risk concentrations. Stress tests are used to deepen the analysis of risk concentrations and, where necessary, to identify new drivers of risk concentrations. Management is regularly informed about the results of the analyses.

## Risk-bearing capacity and stress testing

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The risk-bearing capacity analysis is a key part of overall bank management and Commerzbank's Internal Capital Adequacy Assessment Process (ICAAP). The purpose is to ensure that sufficient capital is held for the risk profile of Commerzbank Group at all times.

Commerzbank monitors risk-bearing capacity using a gone concern approach which seeks primarily to protect unsubordinated lenders. This objective should be achieved even in the event of extraordinarily high losses from an unlikely extreme event.

When determining the economic capital required, allowance is made for potential unexpected fluctuations in value. Where such fluctuations exceed forecasts, they must be covered by the available economic capital in order to absorb unexpected losses (risk coverage potential). The quantification of the risk coverage potential is based on a differentiated view of the accounting values of assets and liabilities and involves economic valuations of certain items in the balance sheet.

The capital requirement for the risks taken is quantified using the internal economic capital model. When setting the economic capital required, allowance is made for all the types of risk at Commerzbank Group that are classified as material in the annual risk inventory. The economic risk approach therefore also includes risk types that are not included in the regulatory requirements for banks' capital adequacy and reflects the effect of portfolio-specific interrelationships. The confidence level of 99.91% in the economic capital model is in line with the underlying gone concern assumptions and ensures the economic risk-bearing capacity concept is internally consistent.

The results of the annual validation of the risk-bearing capacity concept were implemented at the beginning of 2012. This involved the introduction of an enhanced model for measuring and representing business risk<sup>1</sup> under the risk-bearing capacity analysis. Methodological adjustments to distinguish and increase the stability of the risk measure were carried out. The business risk is no longer considered in the economically required capital but is a potential deduction from the risk coverage potential. Reserve risk, i.e. the risk of already defaulted claims giving rise to extra costs due to the need for additional loan loss provisions, is taken into account in the risk-bearing capacity analysis using a risk buffer. Since the beginning of 2012, the results of the risk-bearing capacity analysis are shown using the risk-bearing capacity ratio (RBC ratio), indicating the excess of the risk coverage potential in relation to the economically required capital.

<sup>1</sup> Business risk is deemed to be a potential loss that results from discrepancies between actual income (negative deviation) and expense (positive deviation) and the respective budgeted figures.

The risk-bearing capacity is monitored and managed monthly at Commerzbank Group level. Risk-bearing capacity is deemed to be assured as long as the RBC ratio is higher than 100%. The RBC ratio was always over 100% in 2012 and stood at 161% as at 31 December 2012. The increased RBC ratio towards the end of the year reflects the easing of the European sovereign debt crisis in the second half of 2012 which also significantly reduced the economically required capital for market risk.

**Table 9: Risk-bearing capacity in the Group**

<b>Risk-bearing capacity Group   €bn</b>	<b>31.12.2012<sup>1</sup></b>	<b>31.12.2011</b>
<b>Economic risk coverage potential</b>	<b>29</b>	<b>27</b>
<b>Economically required capital</b>	<b>17</b>	<b>22</b>
thereof for credit risk	13	13
thereof for market risk	4	8
thereof for operational risk	2	2
thereof for business risk <sup>2</sup>	–	2
thereof diversification between risk types	–2	–4
<b>RBC ratio<sup>3</sup></b>	<b>161%</b>	<b>123%</b>

<sup>1</sup> Based on current methodology; only partially comparable to values for 2011.

<sup>2</sup> Since 2012 business risk is considered in the risk coverage potential.

<sup>3</sup> RBC ratio = economic risk coverage potential/economically required capital.

Macroeconomic stress tests are used to check risk-bearing capacity in the face of assumed adverse changes in the economic environment. The underlying scenarios, which are updated every quarter and approved by the Asset and Liability Committee, show exceptional, but plausible, negative developments in the economy and are applied across all risk types. In the scenario calculations, the input parameters for the calculation of economic capital required for all material risk types are consequently simulated to reflect the forecast macroeconomic situation. In addition to the amount of capital required, the income statement is also stressed using the macroeconomic scenarios and then, based on this, changes in the risk coverage potential are simulated. To ensure risk-bearing capacity, compliance with the limit for the stressed RBC ratio that is fixed in the overall risk strategy is constantly monitored and is a key part of internal reporting.

In addition to the regular stress tests, reverse stress tests were implemented at Group level. Unlike regular stress testing, the result of the simulation is determined in advance: a sustained threat to the Bank. The aim of this analysis process in the reverse stress test is to improve the transparency of Bank-specific risk potential and interactions of risk by identifying and assessing extreme scenarios and events.

# Specific risk management

## Default risk

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Default risk refers to the risk of losses due to defaults by counterparties as well as to changes in this risk. In addition to credit default risk and risk from third-party debtors, Commerzbank also includes under default risk issuer and counterparty risk as well as country and transfer risk.

### **Credit risk strategy**

The credit risk strategy is the partial risk strategy for default risks and is derived from the overall risk strategy. It is embedded in the ICAAP process of the Commerzbank Group and therefore contributes to ensuring risk-bearing capacity.

The credit risk strategy serves as the bridge between the Bank's overall risk management across all risk types and the operationalising of default risk management. It relies on quantitative and qualitative management tools that take account of the specific requirements of Core Bank and run-off portfolios.

Quantitative management takes place via clearly defined (economic and regulatory) key figures at a Group and segment/sub-segment level with the aim of ensuring an adequate portfolio quality and granularity in addition to risk-bearing capacity.

Qualitative management guidelines in the form of credit policies define the target business of the Bank and at the level of individual transactions they regulate the transaction type with which the risk resources provided are to be employed. These credit policies are firmly embedded in the credit process: Transactions which do not meet the requirements are subject to competence escalations.

The credit risk strategy describes the strategic areas of action and gives an overview of the important management concepts in credit risk management – particularly for the management of the most important risk concentrations (group of companies, country and sector).

## Risk quantification

The quantification of default risks takes place through a group-wide loan portfolio model in combination with internally developed rating systems. The risk parameters probability of default (PD), exposure at default (EaD<sup>1</sup>) and loss given default (LGD) are determined for every credit risk position. This enables the relevant expected loss to be calculated for individual positions.

The loan portfolio model also produces probability statements on losses from credit defaults and rating changes at portfolio level, particularly quantification of unexpected losses on a risk horizon of one year. This unexpected loss (credit value at risk – CVaR) measures the extent of potential credit risk losses over and above the expected loss and must be backed by equity capital.

### Loan portfolio model

Commerzbank's loan portfolio model is an in-house model which, as with the CreditMetrics or Moody's KMV model, is based on the asset value approach. A Monte Carlo simulation simulates potential realisations of borrowers' assets and changes to borrowers' creditworthiness and defaults. This produces balance sheet losses at portfolio level, which are statistically analysed.

The loan portfolio model firstly requires transaction and customer data: level of exposure, creditworthiness, expected loss given default, country and sector classification.

Coincident default events are also modelled through around 60 systematic risk factors. Specific model parameters (correlations) measure the connection of individual borrowers to these system factors and the synchronisation between system factors. This way they quantify potential diversification effects between different sectors and countries.

### Rating architecture

A key component of Commerzbank's rating architecture is the use of single point of methodology rating procedures, which takes advantage of a central suite of computation kernels. This uniform process architecture not only facilitates risk management and monitoring but also lowers the risk of rating arbitrage within Commerzbank Group. The rating processes are in turn embedded in rating systems which – in addition to the conventional methods of creditworthiness and risk assessment – comprise all of the processes for data collection, calculating ratings and monitoring and management.

The use of rating processes is an essential component of risk assessment in Commerzbank Group, irrespective of regulatory requirements. The resulting ratings are then used in the front and back office credit decision-making processes, the internal management processes to determine loan loss provisions under IFRS and in the internal measurement of the CVaR and risk-bearing capacity respectively. Rating processes which had already been approved were further revised and improved in 2012. The main aim of these improvements was to achieve more accurate risk forecasts and improved management mechanisms.

<sup>1</sup> Economic EaD: Expected exposure amount taking into account a potential (partial) drawing of open lines and contingent liabilities that will adversely affect risk-bearing capacity at default. For Public Finance securities the nominal is reported as EaD.

The table below shows the rating processes used in the IRBA and their main elements as of the reporting date.

**Table 10: IRBA rating procedure**

Scope	Procedure	Hard facts	Soft facts	Over-ruling
Banks	RFI-BANK	▪	▪	▪
Countries	R-SCR	▪	▪	▪
Municipalities/federal states	R-LRG	▪		▪
Corporate customers	COSCO/R-CORP	▪	▪	▪
Financial Institutions (NBFI)	NBFI	▪	▪	▪
Private customers	CORES	▪		
Commercial real estate	RS-CRE	▪ <sup>1</sup>	▪	▪
Renewable energies	RS-REN	▪	▪	▪
Structured finance	RS-CFD	▪	▪	▪
Ship financing	DSB Darling	▪	▪	▪
ABS transactions (sponsors)	IAA	▪	▪	

<sup>1</sup> The calculated figures may be adjusted by the analyst.

Hard facts refer to system-based factors which are used in the rating process and allow no scope for interpretation, e.g. data from companies' annual financial statements, the income of a private individual, or the age of the documents being used.

Soft facts refer to structured areas of analysis where the rating analyst needs to make an assessment and where there is therefore scope for discretion on a case-by-case basis, e.g. an assessment of management or the product quality of the customer being rated. Overruling is a downstream area of analysis where there is a further opportunity for the analyst to assess circumstances separately based on his or her personal judgement. The system result can hereby be adjusted upwards or downwards with the relevant reason for the decision being documented. Overruling should particularly be used when there are strongly fluctuating developments (e.g. market changes) such that an adequate assessment of a company's situation based on the analysis of statistical information (e.g. annual financial statements) is not sufficient to give a future-oriented probability of default. Due to the degree of freedom this gives the rating process, overruling is subject to strict standards and regular monitoring.

The Commerzbank rating method comprises 25 rating levels for loans not in default (1.0 to 5.8) and five default classes (6.1 to 6.5). The Commerzbank master scale allocates a non-overlapping range of probabilities of default that are stable over time to each rating class. The rating processes are subject to annual validation and recalibration procedures so that they reflect the latest assessment results based on the actual observed defaults. Consistent with the master scale method, the default ranges assigned to the ratings within the Commerzbank master scale remain unchanged for the purpose of comparability (stable over time and for the portfolio). External ratings are shown as well for guidance. A direct reconciliation is not possible, however, because external ratings of different portfolios show fluctuating default rates from year to year.

## Commerzbank master scale

Commerzbank AG rating	PD and EL mid-point as percentage	PD and EL range as percentage	S & P		
1.0	0	0			
1.2	0.01	0–0.02	▶ AAA	▶ AAA	Investment grade
1.4	0.02	0.02–0.03	▶ AA+	▶ AA	
1.6	0.04	0.03–0.05	▶ AA, AA–	▶ A	
1.8	0.07	0.05–0.08	▶ A+, A	▶ A	
2.0	0.11	0.08–0.13	▶ A–	▶ A	
2.2	0.17	0.13–0.21	▶ BBB+	▶ A	
2.4	0.26	0.21–0.31	▶ BBB	▶ BBB	Non-investment grade
2.6	0.39	0.31–0.47	▶ BBB–	▶ BBB	
2.8	0.57	0.47–0.68	▶ BB+	▶ BB	
3.0	0.81	0.68–0.96	▶ BB	▶ BB	
3.2	1.14	0.96–1.34	▶ BB–	▶ BB	
3.4	1.56	1.34–1.81	▶ B+	▶ B	
3.6	2.10	1.81–2.40	▶ B+	▶ B	Non-investment grade
3.8	2.74	2.40–3.10	▶ B	▶ B	
4.0	3.50	3.10–3.90	▶ B	▶ B	
4.2	4.35	3.90–4.86	▶ B–	▶ B	
4.4	5.42	4.86–6.04	▶ B–	▶ B	
4.6	6.74	6.04–7.52	▶ B–	▶ B	
4.8	8.39	7.52–9.35	▶ CCC+	▶ CCC	Non-investment grade
5.0	10.43	9.35–11.64	▶ CCC+	▶ CCC	
5.2	12.98	11.64–14.48	▶ CCC+	▶ CCC	
5.4	16.15	14.48–18.01	▶ CCC+	▶ CCC	
5.6	20.09	18.01–22.41	▶ CCC to CC–	▶ CCC	
5.8	47.34	22.41–99.99	▶ CCC to CC–	▶ CCC	
6.1		>90 days past due			Default
6.2		Imminent insolvency			
6.3	100	Restructuring with recapitalisation		C, D-I, D-II	
6.4		Termination without insolvency			
6.5		Insolvency			

Commerzbank has defined an implementation plan for the successive transition of the SACR portfolios into the IRBA. The IRBA coverage ratios stood at 92% based on EaD and 88% based on RWA respectively at the end of 2012. This implies that for loans and receivables the internal credit rating as well as the internal assessment of expected proceeds from collaterals determine the regulatory capital requirement.

An updated implementation plan has been submitted to the BaFin for approval. The Bank projects to reach the 92% IRBA threshold based on RWA for Commerzbank until the end of 2013. The most important measures are the certification of the remaining private customer portfolios as well as the next phase of approval processes in the BRE Bank Group.

For loans and receivables that are not covered by the procedures approved by the supervisory authorities for the IRBA, the standardised approach for credit risk (SACR) applies, under which flat risk weightings are to be used or risk weightings are to be based on external assessments of the borrower's creditworthiness.



### **EaD and LGD**

In addition to classifying the default risk within the scope of the rating process, correctly assessing loss severity is essential for a reliable and holistic risk assessment. The loss severity is determined firstly by the exposure at default (EaD) and secondly by the loss given default (LGD).

When forecasting EaD unused credit lines and other contingent liabilities are included via credit conversion factors (CCF). Depending on the transaction and the customer, the CCFs describe the probability of drawdown in the event of a default within the next twelve months.

The LGD is primarily determined by the expected proceeds from collateral and unsecured portions of loans. Proceeds from collateral are modelled via recovery rates representing a discount on the previously defined market value. The recovery rate depends on the characteristics of the collateral, e.g. when modelling for properties, the collateral is differentiated by property type and location. To determine the proceeds on unsecured portions of loans, the focus is primarily on the characteristics of the customer and the transaction.

The statistical estimates of the CCF and LGD models are based on bank-internal empirical loss data. For this purpose, Commerzbank refers to a database of internal credit defaults since 1997. New defaults are recorded continuously and are made available for statistical analysis once processing is complete. The data collection process is monitored by a number of controls and automatic checking procedures to ensure the quality of the data.

Both the internal and regulatory requirements of the German Solvency Regulation are taken into account when developing statistical models for estimating EaD and LGD. Discussions with experts from back office and debt workout departments play an important role when validating the results and identifying relevant factors. In areas with only a small number of historical default or collateral utilisation cases, the empirical analyses are supplemented with expert assessments. All of the models are regularly validated and recalibrated on the basis of the new findings. Empirically-based LGD and EaD parameters are used in all important internal processes at Commerzbank. The suitability of the models was verified by the Bundesbank and the BaFin as part of the inspection prior to the granting of authorisation for the advanced IRBA.

Finally, combining the above components yields an assessment of the expected loss ( $EL = EaD \cdot PD \cdot LGD$ ) and the risk density as a ratio of EL to EaD (EL to EaD in basis points). In addition to the PD of a borrower (customer rating) rating levels are also assigned to the risk density of a loan commitment (credit rating) using the internal master scale.

### **Validation**

Pursuant to section 147 ff. SolvV, all risk classification procedures are subject to a regular validation and calibration of parameters. Risk Management, which is independent of the front office units, is responsible for preparing the validation reports. Any particular irregularities and necessary changes are presented to the Strategic Risk Committee for approval. Regular monitoring of procedures is an additional system control element. Internal Audit carries out regular reviews of the quality of the rating processes used by inspecting the validation and monitoring measures and verifying the methods and processes used.

Detailed validation concepts are defining which analyses have to be carried out rotationally for the rating systems as well as for EaD and LGD models. In addition special topics can be scheduled during a model validation phase. All of the analysis results are grouped and evaluated using a traffic-light system. If the standards and limits that have been defined in the validation concept are fallen short of, concrete action must be taken once the cause of the error has been clearly established, e.g. activities for the improvement of data quality or a revision of the assessed process.

Generally a distinction is made between quantitative and qualitative reviews of the models. Data quality aspects and statistical analyses are of specific interest in the quantitative validation. This involves comparing the model forecasts with the reality over the course of the assessment period and verifying the quality of the forecasts using statistical methods. To assess the discriminatory power of rating procedures, for example, Gini coefficients, concordance indices and hit rate analyses are used whilst various statistical tests, as for example Spiegelhalter or binomial test, are performed to assess the calibration.

Depending on the type of model a different validation procedure to back-test each single model has to be applied, as described in the following:

- **Default/non-default rating procedure:** In default/non-default models, ratio selection, parameter estimates and calibration are mainly based on internal default periods. A check is therefore made during validation to ascertain whether the internally measured default rates tally with the predicted probabilities of default. Discriminatory power is also checked by calculating the AUC value, and the Gini coefficient respectively.
- **Shadow rating procedure:** The classic backtesting methods used for default/non-default models cannot normally be applied to portfolios with very few defaults. Consequently, back-testing in shadow rating procedures relies very heavily on comparisons with external ratings. Comparing the Bank's internal ratings with those of external ratings agencies (Standard & Poor's, Moody's and Fitch) gives indications of how the Bank's credit rating estimates should be classified in relative terms. For this benchmarking, contingency tables, for example, are produced, variances analysed and the correlation coefficient determined according to Spearman. It should be noted that a benchmarking analysis is naturally only useful or possible if there are a large number of external ratings. If there are insufficient defaults, analysis of explicit discriminatory power would only be of limited use, and if there are none, analysis would not be possible at all. In this case, pseudo discriminatory power values, for example, can be calculated using either external or final internal ratings instead.
- **Hybrid models:** Hybrid models are basically mixtures of default/non-default models and shadow rating procedures. In some low-default portfolios an internal data history has had time to develop. Despite there not being a sufficient number for developing a classic default/non-default model and corresponding validation, there are now some defaults available which should not be ignored for validation or development purposes. The validation techniques of default/non-default models and shadow rating procedures are combined in these procedures.

- **Cash flow-based procedures:** In rating procedures for special funding, the customer's credit rating derives principally from the cash flows generated by the rating object. Typically, the rating procedures are therefore based on cash flow simulations using stochastic processes. The procedures are normally used in low default and low number respectively portfolios for which only very few external benchmarks exist. The models are therefore causally produced and often calibrated using expert knowledge. Direct comparisons of the predicted PDs with realised default rates and discriminatory power analyses using the AUC are not normally very meaningful due to the low number of defaults. The statistical testing of EaD and LGD predictions of these models are likewise difficult. Key elements of the validation of these procedures are descriptive analyses of the input data and comparisons of the cash flows predicted by the users and volatilities with actual cash flows.
- **Wholly expert-based PD procedures:** No external target criterion is available for these procedures and there are no cash flow simulations. Calibration is based wholly on expert knowledge. Validation is therefore very heavily reliant on expert know-how, as is the development. For the validation, the results produced by the procedure in particular are compared with the expert opinion, e.g. by evaluating the overruling pattern.
- **EaD and LGD models:** On the basis of additional default and loss data in-sample and out-of-sample tests are carried out through statistical backtestings. In this context the validity of existing parameter differentiations and the discriminatory power of the applied risk factors have always to be analysed. Data quality and the representativeness of observations for future loss events are also important subjects of analyses.

Table 11 gives an overview of the quantitative validation procedures used for the individual rating procedures:

**Table 11: Validation of IRBA rating procedures**

Rating procedures	PD validation		EaD/LGD validation	
	Methodology	Data history Years	Methodology	Data history Years
RFI-BANK	Shadowrating, default/non-default	7	Empirically calibrated	15
R-SCR	Shadowrating	7	Empirically calibrated	15
R-LRG	Shadowrating	7	Expert-based	–
COSCO/R-CORP	Shadowrating, default/non-default	5	Empirically calibrated	15
NBFI	Expert-based, shadowrating	5	Expert-based	–
CORES	Default/non-default	5	Empirically calibrated	15
RS-CRE	Default/non-default, shadowrating	7	Empirically calibrated	7
RS-CFD	Cashflow simulation	5	Cashflow simulation	7
RS-REN	Cashflow simulation	5	Cashflow simulation	7
DSB Darling	Cashflow simulation	7	Cashflow simulation	10
ABS IAA	IAA-methods <sup>1</sup>	–	IAA-methods <sup>1</sup>	–

<sup>1</sup> Internal classification procedure for securitisations, see page 56.

Qualitative validation is carried out in cooperation with the users of the risk models and particularly takes procedural conditions into consideration. This includes compliance of the procedures with regulations, overruling analyses and the general user acceptance. For EaD and LGD procedures the precise technical implementation of parameters in all using systems has to be verified. Asset Quality Reviews established in the back office also guarantee a continuously reliable data quality and the implementation of the model true to the process. By way of example the monthly reporting of rating coverage to the Board of Managing Directors ensures that the portfolios are valued using up-to-date and valid rating analyses

The validations carried out in 2012 required a modification of the rating procedure for ship finance. The recalibration effect was already taken into account by the end of the year 2012. The parameters used to forecast EaD and LGD were partly updated in the year 2012 due to an expanded historical database. This led to adjustments of the corresponding forecast values amongst others for banks, corporates and in the public finance business.

Other effects will only be partially realised over the course of 2013. Overall, an RWA rise in the single digit billion range can be expected. Beyond that, backtesting did not identify any significant issues.

#### **Commerzbank Group's IRBA portfolio**

The IRBA portfolio of all Commerzbank Group companies included in this Disclosure Report is shown below, broken down into the relevant IRBA asset classes. The structuring of the rating classes corresponds to the Commerzbank internal management via the PD master scale. These have been grouped into five main classes for reasons of clarity. Rating class 6 comprises borrowers in default according to IRBA regulations, whereby the IRBA definition of default is also used for internal purposes. The risk parameters PD and LGD are calculated as exposure-weighted averages; the same also applies to the average risk weighting (RW).

The IRBA exposure value refers to the exposure values to be defined according to section 99 SolvV. These represent the expected amounts of the IRBA position that will be exposed to a risk of loss. The exposure value for off-balance sheet default risk exposures is calculated by weighting using a conversion factor.

Commerzbank AG, Hypothekbank Frankfurt AG, BRE Bank SA and comdirect bank AG use the advanced IRBA and may therefore also use internal estimates for credit conversion factors (CCF) for regulatory purposes. CCFs are necessary for off-balance sheet transactions in order to assess the likely exposure in the event of a possible default on commitments that have not yet been drawn.

In tables 12 to 14, only portfolios which fall under the purview of the IRBA and are rated with a rating process that has been approved by the supervisory authority are shown. Positions in the asset class other non-loan-related assets are not listed. These assets amounting to €2.6bn do not have any creditworthiness risks and are therefore irrelevant for the management of default risks. Furthermore BRE Bank SA positions in the amount of €0.7bn are not included; they are subject to the IRBA slotting approach. Securitisation positions in the IRBA are presented separately in the securitisations section in this chapter.

The exposure values shown in this section (EaD) generally differ from those EaD values in the Annual Report (economic EaD) due to the following:

- For derivative positions, there are differences in definitions between the exposures reported in the Annual Report and the regulatory figures presented in this Disclosure Report.
- Furthermore, there are some transactions that are not included in the figure for risk-weighted assets (RWA) for regulatory purposes but are included in the EaD of the Annual Report and Risk Report respectively.
- The figures presented in this Disclosure Report relate to six entities within the Commerzbank Group considered important for disclosure, while the figures in the Annual Report relate to all companies that have to be consolidated according to IFRS.

All of the IRBA exposures are presented as follows:

Table 12: IRBA exposures (EaD) by rating class – on-balance and off-balance

Rating category €m		Central govern- ments	Banks	Compa- nies	Retail			Total 2012	Total 2011
					IRBA mortgage exposure	Other retail	Qualified revolv. IRBA- positions		
<b>Investment Grade (0-0.68%)</b>									
<b>Rating 1</b> (0.00- 0.08%)	EaD	20,531	29,041	15,168	9,954	2,618	0	77,312	85,155
	LGD in %	11.5	30.0	35.5	14.3	34.1	53.9	24.3	24.5
	PD in %	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
	RW in %	3.0	12.0	17.3	1.9	5.1	2.5	9.1	9.7
<b>Rating 2</b> (0.08- 0.68%)	EaD	18,897	23,670	88,772	30,484	7,794	0	169,617	177,423
	LGD in %	12.9	35.8	33.2	16.8	37.8	57.5	28.6	27.5
	PD in %	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	RW in %	13.5	36.3	41.7	9.2	22.2	7.9	31.1	29.7
<b>Non-Investment Grade (0.68-99.99%)</b>									
<b>Rating 3</b> (0.68- 3.10%)	EaD	4,788	8,115	32,432	6,768	3,658	0	55,761	64,187
	LGD in %	19.5	33.1	31.9	17.1	39.1	52.9	29.7	29.1
	PD in %	1.2	1.6	1.5	1.2	1.3	1.1	1.4	1.4
	RW in %	38.9	70.7	79.7	25.3	44.6	22.6	62.7	62.7
<b>Rating 4</b> (3.10- 9.35%)	EaD	531	2,362	9,972	1,623	760	0	15,248	15,499
	LGD in %	6.6	29.3	29.3	16.7	36.1	59.8	27.5	27.3
	PD in %	5.2	5.3	5.4	5.5	5.2	4.3	5.4	5.5
	RW in %	21.2	95.2	127.7	59.9	56.7	70.0	108.2	89.8
<b>Rating 5</b> (9.35- 99.99%)	EaD	1,238	595	7,336	1,387	474	0	11,030	8,394
	LGD in %	3.9	21.1	25.0	18.8	35.1	66.4	22.1	23.6
	PD in %	33.1	19.4	25.0	22.4	18.1	19.6	25.0	24.9
	RW in %	19.2	110.8	163.3	105.2	74.4	182.9	133.2	112.3
<b>Default (100%)</b>									
<b>Rating 6</b> (100%)	EaD	2	550	15,614	1,016	233	0	17,415	15,511
	LGD in %	6.5	64.6	34.5	33.6	59.5	100.0	35.7	35.2
	PD in %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	RW in %	10.3	0.0	31.4	143.3	2.9	0.0	36.6	19.6
<b>Total</b>									
	EaD	45,987	64,334	169,293	51,231	15,538	0	346,383	366,169
	LGD in %	12.6	32.7	32.7	16.7	37.7	55.9	27.9	27.3
	PD in %	1.2	1.5	11.1	3.1	2.8	4.4	6.4	5.4
	RW in %	11.7	32.2	56.2	16.8	27.6	12.9	38.2	34.8

The next two tables exclusively show the off-balance sheet IRBA exposures:

**Table 13: IRBA exposures (EaD) for off-balance sheet transactions by rating class – unutilised lending commitments**

Rating category €m		Central govern- ments	Banks	Compa- nies	Retail			Total 2012	Total 2011
					IRBA mortgage exposure	Other retail	Qualified revolv. IRBA- positions		
<b>Investment Grade (0-0.68%)</b>									
<b>Rating 1</b> (0.00- 0.08%)	Total sum	2,042	418	7,850	308	878	0	11,496	14,285
	Average EaD	32	17	48	0	1	0	39	85
	Average CCF (%)	47	46	46	100	72	61	50	50
<b>Rating 2</b> (0.08- 0.68%)	Total sum	624	892	42,695	648	4,000	0	48,859	51,154
	Average EaD	44	23	29	0	1	0	26	30
	Average CCF (%)	48	48	46	96	57	27	48	48
<b>Non-Investment Grade (0.68-99.99%)</b>									
<b>Rating 3</b> (0.68- 3.10%)	Total sum	327	378	8,743	140	1,566	0	11,155	12,342
	Average EaD	21	47	24	0	1	0	21	19
	Average CCF (%)	46	49	50	97	58	34	52	50
<b>Rating 4</b> (3.10- 9.35%)	Total sum	23	187	650	13	169	0	1,042	1,683
	Average EaD	2	7	5	0	0	0	4	5
	Average CCF (%)	39	44	51	92	53	25	51	43
<b>Non-Investment Grade (0.68-99.99%)</b>									
<b>Rating 5</b> (9.35- 99.99%)	Total sum	181	10	419	6	65	0	679	783
	Average EaD	59	2	8	0	0	0	15	10
	Average CCF (%)	46	48	43	96	50	45	45	48
<b>Default (100%)</b>									
<b>Rating 6</b> (100%)	Total sum	0	1	383	1	15	0	399	496
	Average EaD	0	0	9	0	1	0	8	12
	Average CCF (%)	45	50	44	40	49	0	44	55
<b>Total</b>									
	Total sum	3,197	1,885	60,740	1,116	6,692	0	73,631	80,744
	Average EaD	35	23	30	0	1	0	27	39
	Average CCF (%)	47	47	47	97	59	41	49	49

Table 14: IRBA exposures (EaD) for off-balance sheet positions by rating class – other unutilised non-derivative off-balance sheet assets<sup>1</sup>

Rating category €m		Central govern- ments	Banks	Compa- nies	Retail			Total 2012	Total 2011
					IRBA mortgage exposure	Other retail	Qualified revolv. IRBA- positions		
<b>Investment Grade (0-0.68%)</b>									
<b>Rating 1</b> (0.00- 0.08%)	Total sum	1,918	817	4,196	0	38	0	6,969	7,068
	Average EaD	5	30	18	0	0	0	17	20
	Average CCF (%)	25	45	29	0	22	0	31	31
<b>Rating 2</b> (0.08- 0.68%)	Total sum	2,178	3,184	17,309	0	418	0	23,090	21,796
	Average EaD	4	5	30	0	0	0	23	9
	Average CCF (%)	29	26	34	0	23	0	32	29
<b>Non-Investment Grade (0.68-99.99%)</b>									
<b>Rating 3</b> (0.68- 3.10%)	Total sum	1,225	3,040	3,011	0	160	0	7,437	8,130
	Average EaD	16	15	2	0	0	0	10	5
	Average CCF (%)	28	34	27	0	25	0	30	29
<b>Rating 4</b> (3.10- 9.35%)	Total sum	738	2,144	478	0	28	0	3,389	2,326
	Average EaD	2	19	2	0	0	0	13	3
	Average CCF (%)	26	28	32	0	29	0	28	27
<b>Non-Investment Grade (0.68-99.99%)</b>									
<b>Rating 5</b> (9.35- 99.99%)	Total sum	1,188	315	334	0	12	0	1,849	1,923
	Average EaD	48	5	2	0	0	0	33	34
	Average CCF (%)	22	26	23	0	30	0	23	26
<b>Default (100%)</b>									
<b>Rating 6</b> (100%)	Total sum	9	2	416	0	7	0	434	545
	Average EaD	2	1	1	0	0	0	1	3
	Average CCF (%)	20	45	27	0	25	0	27	35
<b>Total</b>									
	Total sum	7,257	9,502	25,744	0	665	0	43,168	41,789
	Average EaD	13	14	24	0	0	0	19	11
	Average CCF (%)	26	31	32	0	24	0	31	29

<sup>1</sup>Securities lending and repurchase transactions are not included.

### Commerzbank Group's SACR portfolio

The portfolios currently excluded from the IRBA are measured in accordance with SACR regulations as permitted under partial use provisions. In contrast to the IRBA, the SACR is largely based on a flat risk weighting or external ratings. Commerzbank has nominated the rating agencies Standard & Poor's Rating Services, Moody's Investors Service and Fitch Ratings for the use of external ratings.

For a large portion of the non-security positions, there are no position-specific external credit ratings. In these cases, it is possible to transfer issue ratings subject to specific requirements. In order to determine the specific external credit ratings to be used, Commerzbank has implemented a binding algorithm in accordance with section 43 ff. SolvV.



The allocation of external ratings and flat risk weightings is carried out according to the following procedure:

- **A clear ISIN** can be allocated to the position: The process is based on the provisions of section 44 sentence 3 and 4 SolvV for the credit assessments of rated SACR positions. A long-term issue rating is allocated to the position via the ISIN. If there is no long-term issue rating available, a short-term issue rating may only be allocated via the ISIN for positions belonging to the SACR asset class companies. If this is also not available, the asset is treated as though no ISIN has been allocated to it.
- The position can **not be allocated with an ISIN**: The process is based on the provisions of section 45 sentence 2 and 3 SolvV for external credit assessments of unrated SACR positions. In this case, comparable exposures are used to derive credit assessments. Comparable exposures are defined as issues with the same issuer, which have an unsecured long-term foreign currency rating. All comparable exposures with a higher or pari passu ranking and an SACR risk weighting > 100% are transferred to the exposure being assessed. If the rating cannot be transferred, either comparable exposures ranking pari passu with an SACR risk weighting < 100% or lower-ranking comparable exposures will be selected or no issue rating will be allocated to the receivable. In the latter case, the allocation of the flat SACR risk weighting is carried out according to the provisions of SolvV.

The risk weightings determined by external ratings or flat risk weightings and the allocations of the exposures to these risk weightings are shown below. The table shows the SACR exposures (EaD) before and after credit risk mitigation techniques (CRMT) according to section 8 SolvV.

Table 15: Exposures in the Standardised Approach to Credit Risk – before credit risk mitigation techniques

Asset class €m	Risk weightings										Total
	0%	10%	20%	35%	50%	70%	75%	100%	150%	Other	
Central governments	31,227	0	28	0	0	0	0	3	0	0	31,259
Regional government/local authorities	30,173	0	587	0	0	0	0	11	0	0	30,771
Other public-sector bodies	11,418	0	2,935	0	291	0	0	177	0	0	14,820
International organisations	95	0	0	0	0	0	0	0	0	0	95
Banks	2,249	0	4,545	0	364	0	0	205	0	0	7,363
Multilateral development banks	109	0	12	0	0	0	0	0	0	0	121
Companies	250	0	1,758	0	1,076	0	0	14,537	2	0	17,624
Loans backed by real estate	0	0	0	3,832	2,632	0	0	0	0	0	6,464
Retail	0	0	0	0	0	0	8,575	0	0	0	8,575
Debt instruments backed by banks	0	30	0	0	100	0	0	0	0	0	130
Investment funds	0	0	0	0	0	0	0	0	0	4,522	4,522
Other items	1,868	0	15	0	0	0	0	945	0	0	2,828
Overdue items	0	0	0	0	11	0	0	534	685	0	1,230
Investments	0	0	0	0	0	0	0	1,744	0	0	1,744
<b>Total 2012</b>	<b>77,389</b>	<b>30</b>	<b>9,882</b>	<b>3,832</b>	<b>4,475</b>	<b>0</b>	<b>8,575</b>	<b>18,156</b>	<b>687</b>	<b>4,522</b>	<b>127,547</b>
<b>Total 2011</b>	<b>69,961</b>	<b>135</b>	<b>17,332</b>	<b>7,516</b>	<b>5,812</b>	<b>0</b>	<b>12,737</b>	<b>37,828</b>	<b>1,317</b>	<b>3,359</b>	<b>155,998</b>

Table 16: Exposures in the Standardised Approach to Credit Risk – after credit risk mitigation techniques

Asset class €m	Risk weightings										Total
	0%	10%	20%	35%	50%	70%	75%	100%	150%	Other	
Central governments	37,306	0	201	0	87	0	0	0	0	0	37,594
Regional government/local authorities	33,447	0	691	0	40	0	0	11	0	0	34,189
Other public-sector bodies	11,923	0	2,818	0	291	0	0	47	0	0	15,078
International organisations	95	0	0	0	0	0	0	0	0	0	95
Banks	2,453	0	4,714	0	346	0	0	197	0	0	7,710
Multilateral development banks	109	0	12	0	0	0	0	0	0	0	121
Companies	51	0	1,747	71	352	0	0	9,224	0	0	11,445
Loans backed by real estate	0	0	0	3,832	2,624	0	0	0	0	0	6,456
Retail	0	0	0	0	0	0	7,360	0	0	0	7,360
Debt instruments backed by banks	0	30	0	0	100	0	0	0	0	0	130
Investment funds	0	0	0	0	0	0	0	0	0	4,522	4,522
Other items	1,868	0	15	0	0	0	0	945	0	0	2,828
Overdue items	0	0	0	0	13	0	0	453	570	0	1,035
Investments	0	0	0	0	0	0	0	1,744	0	0	1,744
<b>Total 2012</b>	<b>87,253</b>	<b>30</b>	<b>10,199</b>	<b>3,903</b>	<b>3,852</b>	<b>0</b>	<b>7,360</b>	<b>12,620</b>	<b>570</b>	<b>4,522</b>	<b>130,309</b>
<b>Total 2011</b>	<b>81,214</b>	<b>135</b>	<b>17,689</b>	<b>7,516</b>	<b>5,092</b>	<b>0</b>	<b>11,629</b>	<b>31,354</b>	<b>1,050</b>	<b>3,358</b>	<b>159,038</b>

In order to mitigate credit risk in the SACR, Commerzbank Group takes financial collateral and guarantees into consideration; these will be dealt with separately in the section Risk mitigation. Furthermore, collateral in the form of property charges also reduce the risk weighting.

To determine the SACR exposure before the credit risk mitigation techniques, the SACR assessment basis before credit risk mitigation is multiplied with the respective SACR conversion factor pursuant to section 50 SolvV. In accordance with section 48 SolvV, the exposure after credit risk mitigation techniques is equal to the product of the SACR assessment basis after credit risk mitigation pursuant to section 49.1 SolvV and the respective SACR conversion factor for each exposure pursuant to section 50 SolvV. For the SACR assessment basis, in contrast to the IRBA, the valuation allowances based on each of the positions are deducted. The other risk weightings column shows the exposures derived from SACR investment units for which the look-through-approach has been applied by the investment company.

The substitution principle included under the SACR for the consideration of guarantees, i.e. the borrower's risk weighting is replaced by that of the guarantor, means that a transfer of the guarantee amount from the borrower's risk weighting class to that of the guarantor takes place. However, this shift only takes place if the risk weighting of the guarantor is lower than that of the borrower. This is why the exposure before CRMT for assets guaranteed by central governments for example is less than after CRMT. This can be seen in the table under the 0% risk weighting.

Overdue positions are shown with a risk weighting of 150%. Depending on the valuation allowances based on them (SLLP, Port LLP impaired) or the collateral, this may lead to a shift to lower risk weighting classes.

No deductions from capital were made for SACR positions as of 31 December 2012.

## Risk management

To manage and limit default risks, we use the risk parameters exposure at default (EaD), expected loss (EL), risk density (EL/EaD) and credit value at risk (CVaR = economically required capital for credit risk with a confidence level of 99.91%) as well as all-in for bulk risks.

### Capital management

All risk types in the overall risk strategy for economically required capital (ErC) are given limits on a group-wide basis to ensure proper capital adequacy levels for the Commerzbank Group; a CVaR limit is specified in particular. Due to the systematically restricted options for reducing default risk on a short-term basis, it is important to take account of expected trends in credit risk (medium-term and long-term) in order to remain within limits. For this reason, planned and forecast values of capital ratios and comparison with actual trends observed play a key role in ongoing management. This is to ensure that limits are met as a result of keeping to plan and forecast.

### **Limitation of bulk and concentration risks**

The financial market crisis has shown that defaults of individual large market participants may present considerable risks for the stability of the financial system. In order to detect and limit these risks at an early stage, risk concentrations of individual large corporate customers (bulk risks) as well as those within countries or customer groups are actively managed amongst others under consideration of segment-specific features.

A uniform definition based on all-in is used to manage bulk risk of large corporate customers. The all-in concept comprises all customer credit lines approved by the Bank in their full amount – irrespective of the loan utilisation to date.

The management of risk concentrations within default risk includes both exposure-related credit risk concentrations (bulk risks) as well as country and sector concentrations. Management and the Supervisory Board's Risk Committee are regularly informed about the results of the analyses.

### **Country risk management**

The Group's country risk calculation records both transfer risks and region-specific event risks defined by political and economic events which impact on the individual economic entities of a country. Country risk management comprises decisions, measures and processes which aim to influence the country portfolio structure in order to achieve business, risk and return targets. Country risks have been managed and limited since 2012 based on loss at default at country level. Country exposures which are significant for Commerzbank due to their size and exposures in countries in which Commerzbank holds significant investments in comparison to the GDP of those countries are handled by the Strategic Risk Committee on a separate basis.

### **Risk mitigation**

At Commerzbank, risk mitigation takes the form of guarantees, collateral and netting. Within the scope of IRBA tests, processes for offsetting collateral instruments were recognised; in particular this includes financial collateral, guarantees, credit derivatives, life insurance, mortgage liens in the land register and other real collateral.

In the IRBA, the Bank takes account of credit risk mitigating effects arising from the receipt of eligible guarantees (guarantees/sureties, credit default swaps, comparable claims on third parties) by using the risk parameters (PD and LGD) of the guarantor. Under the SACR, the Bank uses the risk weightings laid down by the supervisory authority.

As part of the assessment of their declaration of liability, all guarantors are essentially subject to a review of their creditworthiness and rating in accordance with the sector and business to which they belong. The aim of the creditworthiness review is to establish a guarantor's maximum ability to pay.

In accordance with the German Solvency Regulation, the quality of the collateral received is subject to rigorous review and is continuously monitored. In particular, this includes establishing the legal enforceability of the collateral and ensuring that it is valued regularly and managed appropriately. The recoverability of the collateral instruments is reviewed after reaching a certain threshold on a regular basis during the term of a loan as part of the regular credit processing. Depending on the collateral type, this usually takes place annually but at shorter intervals as the case may be. Positive correlations between the creditworthiness of the borrower and the value of the collateral or guarantee are established in the lending process and collateral instruments affected are not offset.

Processing the collateral for corporate customers is in the exclusive responsibility of the risk function's collateral management.

In addition to the listing of principles for the use of collateral, the valuation and management (processing) of collateral are governed by universally applicable standards and collateral-specific instructions (guidelines, manuals, descriptions of processes, IT instructions, legally validated standard contracts and samples). The standards established to hedge against or mitigate the risks of loans, which also take account of the regulatory requirements of SolvV, include:

- Legal and operational standards for documentation and data collection as well as valuation standards (each commitment to be analysed at least once a year).
- Standardisation and updating of the collateral valuation are ensured by laying down valuation processes, prescribing standardised valuation methods, parameters and defined discounts for collateral, clearly defining responsibilities for the processing and valuation process, as well as the requirements for revaluations at regular intervals.
- Other standards for taking account of specific risks, e.g. operational risks, correlation and concentration risks, maturity date and duration risks, market price change risks (e.g. due to currency fluctuations), country risks, legal risks or risks of changes in the law, environmental risks and risks of insufficient insurance cover.

For the vast majority of its derivative default risk positions, Commerzbank Group uses the internal model method (IMM) according to section 223 SolvV. The credit equivalent amounts are determined as expected future exposure through the simulation of various market scenarios, taking netting and collateral into account.

For securities repurchase, lending and comparable transactions involving securities or goods, the net assessment basis is determined in accordance with section 215.1 SolvV, taking any offsetting agreements in accordance with section 209 SolvV and the application of section 215.5 SolvV and section 155 ff. SolvV into account. Guarantees and credit derivatives are taken into account via the substitution approach. The double-default procedure defined under section 86.3 SolvV is applied.

The following table Collateralised SACR exposures shows the scope of the credit risk mitigation effects of financial collateral, guarantees, credit derivatives, mortgage liens and life insurances under the SACR. The effectively secured exposures, i.e. taking into consideration all of the relevant haircuts for the collateral, are allocated to the SACR asset class. In taking financial collateral into account as a credit-risk mitigating technique, Commerzbank generally uses the comprehensive method as defined under sections 186 to 203 SolvV. This stipulates that the assessment basis for the default risk position is reduced by the value of the financial collateral. For smaller entities the basic method pursuant to section 185 SolvV is used.

Table 17: Collateralised SACR exposures<sup>1</sup>

Asset class €m	Financial collateral	Guarantees	Life insurances	Credit derivatives	Mortgage liens	Total 2012	Total 2011
Companies	1,284	5,221	111	0	2,135	8,751	10,350
Retail	677	217	320	0	4,362	5,576	9,116
Banks	251	21	0	0	0	271	641
Central governments	0	3	0	0	0	3	10
Regional governments and local authorities	1	0	0	0	0	1	1
Other public-sector bodies	14	237	0	0	0	251	267
Overdue items	7	179	10	0	174	370	532
<b>Total 2012</b>	<b>2,233</b>	<b>5,878</b>	<b>441</b>	<b>0</b>	<b>6,671</b>	<b>15,224</b>	
<b>Total 2011</b>	<b>2,906</b>	<b>6,861</b>	<b>10</b>	<b>209</b>	<b>10,930</b>		<b>20,917</b>

<sup>1</sup> For reasons of materiality, secured investment positions have not been presented.

The secured positions shown under mortgage liens are the exposures that are allocated to the SACR asset class Exposures secured by mortgage liens. For the purposes of comparability with the figures shown under the IRBA, this asset class is not presented separately and the exposures secured by mortgage liens are instead classified by the respective asset class of the borrower.

Besides the collateral in the SACR, some physical and other collateral are only eligible for recognition under the IRBA, and are also offset under the IRBA. In the table below, financial collateral and IRBA collateral are shown separately from the guarantees.

Table 18: Total collateralised IRBA exposures (EaD) – financial and other collateral/guarantees<sup>1</sup>

Asset class €m	Financial collateral	Guarantees	Life insurances	Credit derivatives	Mortgage liens	Other IRBA collateral <sup>2</sup>	Total 2012	Total 2011
Companies	4,423	6,118	73	1,123	26,143	7,350	45,230	57,393
Retail banking: sub-class IRBA exposures secured by mortgage liens	631	1	184	0	14,031	22,264	37,110	34,440
Retail banking: other IRBA exposures	418	211	0	0	0	2,888	3,518	3,618
Banks	1,190	4,123	0	0	39	96	5,448	2,474
Central governments	1,736	2,894	0	9	0	353	4,993	4,360
<b>Total 2012</b>	<b>8,399</b>	<b>13,347</b>	<b>257</b>	<b>1,132</b>	<b>40,214</b>	<b>32,951</b>	<b>96,300</b>	
<b>Total 2011</b>	<b>8,732</b>	<b>13,074</b>	<b>302</b>	<b>3,245</b>	<b>0</b>	<b>76,932</b>		<b>102,285</b>

<sup>1</sup> For reasons of materiality, secured investment positions have not been presented.

<sup>2</sup> Exposures secured by mortgage liens on residential and commercial property do not form an asset class of their own under the IRBA. They are therefore shown under other IRBA collateral. Mortgage liens in the land register also fall into this category.

The calculation of collateral is based on market values weighted with recovery rates. These recovery rates are based on empirical data and form part of the LGD models. By definition, the rates cannot exceed 100%; the figures shown are therefore lower than the market values. By contrast, under the IRBA the so-called substitution approach to offset guarantees and credit derivatives is used – both subsumed as guarantees in SolvV. The protection is therefore not reflected in the LGD as is the case with financial and other IRBA collateral but via the substitution of the debtor's risk parameters with those of the guarantor.

## Summary of default risks

This section provides an overview of the total portfolio containing default risks with an assessment basis amounting to €537bn. For balance sheet positions, a distinction is made between the lending business and securities. Off-balance sheet positions, e.g. loan commitments or placed guarantees, other non-derivative off-balance sheet assets and derivative instruments, are shown separately.

The sum of SACR and IBRA positions with their assessment basis, as defined in sections 49 and 100 SolvV, is shown. The IRBA assessment basis for loans represents the amount claimed by the customer. If valuation allowances have been formed based on the exposure to the customer, these are not deducted, unlike the volume of assets determined in accordance with IFRS accounting standards. Off-balance sheet positions relate to the amount committed to but not yet claimed by the customer. A weighting with the conversion factor does not take place. For securities, the IRBA assessment basis is determined from the highest value of the acquisition costs or the sum of the carrying amount and default risk-related write-downs. For derivative positions, the credit equivalent amount as defined in section 17 in combination with section 18 ff. SolvV is applied. The SACR assessment basis is calculated using the IFRS carrying value of the positions giving consideration to the write-downs of the last approved annual financial statement. The assessment basis includes all positions subject to credit risks regardless of whether the positions are listed in the banking or the trading book.

Effectively securitised positions are not included in the tables below. In accordance with section 232 SolvV, positions are deemed to be effectively securitised if there has been an effective and operative transfer of risk. This applies regardless of whether these are traditionally or synthetically securitised positions. Securitisation positions arising from Group companies included in this Disclosure Report acting as investors or sponsors have also not been shown. Due to their particular significance, these are shown in a separate chapter on securitisations.

Other non-loan-related assets and other items, respectively, are only listed when they are characterised as claims. These are mainly cash items in the process of collection and accrued items. Other non-loan related assets which are largely formed through tangible assets as well as positions which are not characterised as claims are not included in the following tables.

Table 19: Assessment basis by asset class

Asset class €m	On-balance assets		Off-balance assets			Total 2012	Total 2011
	Loans	Securities	Commit- ments	Deriva- tives	Guarantees and others		
<b>SACR</b>							
Central governments	14,228	14,455	224	2,557	5	31,470	25,980
Regional governments and local authorities	18,915	10,252	1,318	1,539	29	32,053	35,530
Other public-sector bodies	8,752	3,244	325	2,723	4	15,048	10,839
Multilateral development banks	10	109	10	0	0	129	40
International organisations (in terms of SolvV)	25	70	0	0	0	95	169
Banks	4,254	1,365	118	2,001	17	7,756	15,655
Debt instruments backed by banks	0	130	0	0	0	130	314
Companies	10,864	4,481	1,822	775	1,722	19,664	41,238
Retail	8,074	0	17,552	60	324	26,010	29,040
Loans backed by real estate	6,398	0	69	29	29	6,525	10,660
Investment funds	318	4,203	0	0	0	4,522	3,359
Other items	1,132	114	1	0	0	1,248	2,470
Overdue items	1,981	0	18	1	25	2,026	4,074
<b>Total SACR</b>	<b>74,952</b>	<b>38,424</b>	<b>21,460</b>	<b>9,686</b>	<b>2,155</b>	<b>146,677</b>	<b>179,369</b>
<b>IRBA</b>							
Central governments	13,249	7,700	238	667	676	22,529	19,842
Banks	27,388	24,289	1,885	9,199	9,502	72,263	81,682
Retail banking: sub-class IRBA exposures secured by mortgage liens	50,148	0	1,116	0	0	51,264	45,962
Retail banking: other IRBA exposures	11,125	0	6,692	97	665	18,578	20,248
Retail banking: qual. revolv. IRBA exposures	0	0	0	0	0	1	1
Companies	123,446	1,840	60,915	12,023	25,744	223,968	239,568
Other loan-independent assets	1,719	272	0	0	0	1,991	894
<b>Total IRBA</b>	<b>227,075</b>	<b>34,100</b>	<b>70,846</b>	<b>21,986</b>	<b>36,587</b>	<b>390,594</b>	<b>408,196</b>
<b>Total 2012</b>	<b>302,026</b>	<b>72,524</b>	<b>92,306</b>	<b>31,672</b>	<b>38,742</b>	<b>537,270</b>	
<b>Total 2011</b>	<b>330,892</b>	<b>76,889</b>	<b>102,378</b>	<b>37,530</b>	<b>39,875</b>		<b>587,565</b>



The selected country cluster corresponds to the geographical classification of the assessment basis used for internal purposes.

**Table 20: Assessment basis by country cluster (independent of segment classification)**

Country cluster €m	On-balance assets		Off-balance assets			Total 2012	Total 2011
	Loans	Securities	Commit- ments	Deriva- tives	Guarantees and others		
Germany	172,895	24,935	62,416	11,004	18,323	289,574	310,238
Western Europe (without Germany)	54,241	33,928	17,646	16,545	9,382	131,741	146,478
Central- and Eastern Europe	36,470	2,434	4,454	527	2,077	45,961	51,640
thereof Poland	26,208	807	3,385	238	522	31,160	29,718
North and South America	22,760	6,071	5,202	2,063	2,420	38,517	45,326
thereof USA	13,816	3,283	4,530	1,751	1,167	24,547	28,566
Asia	10,330	2,011	2,032	893	5,006	20,272	24,149
Other	5,330	3,146	557	640	1,533	11,206	9,734
<b>Total 2012</b>	<b>302,026</b>	<b>72,524</b>	<b>92,306</b>	<b>31,672</b>	<b>38,742</b>	<b>537,270</b>	
<b>Total 2011</b>	<b>330,892</b>	<b>76,889</b>	<b>102,378</b>	<b>37,530</b>	<b>39,875</b>		<b>587,565</b>

The breakdown by sector is based on a system used internally by the Bundesbank. For comprehension purposes, the assessment basis has been broken down by sector with a volume of more than €10bn. Sectors with a volume below this threshold value have been grouped under the Other item

**Table 21: Assessment basis by sector**

Sector €m	On-balance assets		Off-balance assets			Total 2012	Total 2011
	Loans	Securities	Commit- ments	Deriva- tives	Guarantees and others		
Banking and insurance	51,362	33,610	6,996	17,579	14,757	124,303	140,259
thereof Banks	40,968	25,995	1,396	11,554	10,073	89,985	
thereof insurance companies	1,286	25	1,965	1,627	2,233	7,136	
thereof other financial institutions	9,107	7,590	3,636	4,398	2,451	27,182	
Public sector, defence and social security	42,433	35,516	1,804	4,499	22	84,272	83,445
Manufacturing industry	30,609	323	33,719	2,344	12,831	79,826	87,270
Private households	56,680	0	17,893	77	140	74,790	79,631
Real estate, renting and business activities	56,586	55	5,694	3,409	1,465	67,209	81,070
Transport and communications	24,303	800	4,872	1,398	1,169	32,542	36,885
Trade, maintenance and repair of motor vehicles and consumer goods	12,173	0	10,075	549	2,790	25,586	25,143
Energy and water supply	7,563	1,149	4,451	1,007	2,761	16,931	18,069
Other public and personal service activities	7,919	22	1,497	276	483	10,197	10,204
Other	12,399	1,049	5,307	535	2,324	21,615	25,589
<b>Total 2012</b>	<b>302,026</b>	<b>72,524</b>	<b>92,306</b>	<b>31,672</b>	<b>38,742</b>	<b>537,270</b>	
<b>Total 2011</b>	<b>330,892</b>	<b>76,889</b>	<b>102,378</b>	<b>37,530</b>	<b>39,875</b>		<b>587,565</b>

The breakdown according to residual terms is based on the maturity and emphasises the focus on relatively long-term financing transactions and overnight receivables. Overnight receivables include call and overnight transactions and credit lines that can be terminated at any time.

**Table 22: Assessment basis by residual term**

Maturity €m	On-balance assets		Off-balance assets			Total 2012	Total 2011
	Loans	Securities	Commit- ments	Derivatives	Guarantees and others		
daily maturity	42,265	683	53,070	1,286	15,944	113,249	109,286
> 1 day up to 3 months	27,437	2,179	2,031	3,148	6,135	40,930	45,285
> 3 months up to 1 year	30,377	3,658	9,228	3,066	6,738	53,068	58,721
> 1 year up to 5 years	72,207	29,949	26,322	8,305	5,382	142,166	164,419
> 5 years	129,740	36,056	1,654	15,867	4,542	187,859	209,853
<b>Total 2012</b>	<b>302,026</b>	<b>72,524</b>	<b>92,306</b>	<b>31,672</b>	<b>38,742</b>	<b>537,270</b>	
<b>Total 2011</b>	<b>330,892</b>	<b>76,889</b>	<b>102,378</b>	<b>37,530</b>	<b>39,875</b>		<b>587,565</b>

## Default risks arising from derivative positions

In addition to market risks, derivative positions also give rise to default risks when a claim arises against the counterparty in the form of positive market values.

Commerzbank also looks at wrong way risk. This occurs when a counterparty's exposure and credit quality are negatively correlated; this means that wrong way risk is an additional risk source, as the exposure is traditionally measured independently from the counterparty's creditworthiness.

The derivative positions shown in the tables below do not include securitisation positions as defined in SolvV as these are shown in the securitisations chapter. In particular, this means that interest rate and currency swap or credit derivative transactions entered into with special-purpose securitisation companies are not included.

**Table 23: Positive replacement values by risk type before/after netting/collateral**

Risk type   €m	Replacement values	
	2012	2011
Interest rate risk	255,137	304,758
Currency risk	13,519	17,751
Equity risk	1,642	2,333
Precious metal risk	59	92
Commodity price risk	244	273
Credit derivatives	1,972	3,962
Collateral	21,619	24,808
<b>Replacement values before netting/collateral</b>	<b>294,193</b>	<b>353,977</b>
Nettable value	261,324	315,909
Eligible collateral	14,318	10,382
<b>Replacement values after netting/collateral</b>	<b>18,552</b>	<b>27,686</b>

The positive market values listed in the table are the expenses which would be incurred by the Bank to replace the contracts originally concluded with transactions of an equivalent financial

value. From the Bank's point of view, a positive market value thus indicates the maximum potential counterparty-specific default risk. The positive market value is understood as a replacement expense in the regulatory sense. The amounts shown in the table reflect the positive replacement values before taking related collateral into account and before exercising offsetting agreements. The replacement values are broken down according to risk types in the contracts involved. The collateral provided for derivative positions is shown as a separate risk type as it can not be allocated to other specific risk types.

The market values arising from equity risk relate to the derivative default risk positions pursuant to section 11 SolvV and do not take the rules for embedded derivatives pursuant to IAS 39 into account. OTC derivatives (including derivatives processed via central counterparties) are included in this disclosure. Listed derivatives are not included as they are processed via central counterparties on a daily basis.

In order to minimise both the economic and the regulatory credit risk arising from these instruments, Commerzbank concludes master agreements (bilateral netting agreements) such as the 1992 ISDA Master Agreement Multicurrency Cross Border or the German Master Agreement for Financial Futures with the respective business partners. By means of such bilateral netting agreements, the positive and negative market values of the derivatives contracts included under a master agreement can be offset against one another and the regulatory add-ons for future risks of these products can be reduced. Through this netting process, the credit risk is limited to a single net claim on the party to the contract (close-out netting).

For both regulatory reports and the internal measurement and monitoring of the credit commitments, these risk-mitigating techniques are only used if Commerzbank considers them enforceable in the jurisdiction in question, should the counterparty become insolvent. Legal opinions are obtained from various international law firms in order to verify enforceability.

Similar to the master agreements are the collateral agreements (e.g. collateral annex for financial futures contracts, credit support annex), which Commerzbank concludes with its business associates to secure the net claim or liability remaining after netting (receipt or provision of collateral). As a rule, this collateral management reduces credit risk by means of prompt – mostly daily or weekly – measurement and adjustment of the customer exposure. The – mostly cash – collateral and netting opportunities shown in the aforementioned table reduce the exposure to counterparties to €18,552m (2011: €27,686m).

The basis for determining the offset amounts for the default risk from derivative positions is not the positive market values but instead the credit equivalent values. To determine the assessment basis of derivative default risk positions, Commerzbank uses the internal model method (IMM) pursuant to section 223 SolvV, the market valuation method pursuant to section 18 SolvV and the maturity method pursuant to section 23 SolvV.

The approach to risk quantification under the IMM is generally based on a risk simulation which generates future market scenarios and creates portfolio valuations based on these scenarios. Netting and collateral agreements are taken into account.

In applying the internal model method, the EaD is defined per counterparty as the product of the alpha factor and the calculated effective expected positive exposure  $E^*$ . In determining  $E^*$ , risks that are not taken into account, correlation risks for example, are included in the calculation of the capital adequacy requirement through the alpha factor. Banks can either estimate the alpha factor themselves or use the supervisory value of 1.4. Commerzbank does not estimate its own alpha factor, preferring instead to use the supervisory value to calculate exposure at default.

The credit equivalent values for the counterparty default risk from derivative positions – including exchange-traded derivatives – used to determine the (net) assessment basis amounted to €11,562m at the end of 2012 using the market valuation method and €21,687m using the internal model method. Credit equivalent values effectively correspond to the exposures of on-balance sheet default risk positions as a credit conversion factor of 100% is applied to derivative positions. Transactions with central counterparties are not shown here as their assessment basis is zero and there is therefore no capital requirement.

All operative units, branches and subsidiaries are, subject to compliance with the regulations, authorised to use credit derivatives to hedge credit risks in loan portfolios (i.e. purchase of hedges). This allows them to hedge credit risks with a credit derivative without having to sell or assign the loan.

**Table 24: Breakdown of credit derivative business in the banking and trading book**

Type of credit derivative Nominal value   €m	Banking book		Trading book	
	Buy position	Sell position	Buy position	Sell position
Credit Default Swap	4,849	4,408	59,781	59,315
Total Return Swap	0	0	3,264	0
<b>Total 2012</b>	<b>4,849</b>	<b>4,408</b>	<b>63,045</b>	<b>59,315</b>
<b>Total 2011</b>	<b>10,424</b>	<b>2,984</b>	<b>76,329</b>	<b>78,953</b>

Contractual agreements that oblige Commerzbank to provide additional collateral to its counterparties in the event of a downgrading of its own rating are governed in the Credit Support Annexes which are established as part of the netting master agreements for the OTC derivative business.

The counterparty ratings (Standard & Poor's, Moody's and Fitch) are automatically uploaded on a daily basis via interfaces with Reuters/Telerate/Bloomberg into the collateral management system, which can simulate downgrade scenarios if necessary. This makes it possible to carry out an advance analysis of the potential effects on the collateral amounts.

### Loan loss provisions for default risks

The responsibility for processing non-performing loans for the core bank lies with Group Risk Management Intensive Care whereas Group Risk Management - Credit Risk NCA was recently created and is responsible for the Non-Core Assets segment. These two units have the specific expert knowledge to support customers undergoing restructuring and to successfully process default commitments including collateral realisation.

The lending risks reported under the IFRS category LaR are taken into account by forming specific loan loss provisions (SLLP), portfolio loan loss provisions (PLLP) and general loan loss provisions (GLLP) for on- and off-balance sheet loan assets on the basis of the rules and regulations according to IAS 37 and 39.

When determining loan loss provisions, the fundamental criteria include whether the claims are in default or not and whether the claims are significant (exposure over €1m) or insignificant (exposure up to €1m).

All claims which are in default under the Basel regulations are defined as in default or non-performing. The following events are decisive in determining the default of a customer:

- Imminent insolvency (over 90 days past due).
- The Bank is assisting in the financial rescue/restructuring measures of the customer with or without restructuring contributions.
- The Bank has demanded repayment of its claim.
- The customer becomes insolvent.

A portfolio loan loss provision (PLLP impaired) is recognised for non-significant defaulted claims on the basis of internal parameters. For significant defaulted claims, the net present value of the expected future cash flows is used to calculate both specific valuation allowances and specific loan loss provisions (SLLP). The cash flows include both the expected payments and the expected proceeds from realising collateral and other recoverable cash flows. The loan loss provision is equal to the difference between the claim amount and the net present value of all the expected cash flows. The calculation of the general loan loss provision (GLLP and PLLP non-impaired) for on-balance sheet and off-balance sheet transactions takes place at the level of each individual transaction using internal default parameters (PD, LGD) and taking the LIP factor into account (LIP = loss identification period). Country risks are not accounted for separately under IFRS but are included for the purposes of the SLLP calculation via the individual cash flow estimates or are given a flat-rate value in the LGD parameters when calculating portfolio loan loss provisions.

Impairment tests are also performed for securities classified as available for sale (AFS) and loans and receivables (LaR) if the fair value is below the amortised acquisition costs due to the credit rating. At each balance sheet date, it will be reviewed whether there is objective evidence (trigger event) of impairment and whether this case of loss would impact on the expected cash flows. The trigger event will be reviewed on the basis of the creditworthiness of the borrower/issuer or the issue rating, e.g. for Pfandbriefe (mortgage bonds) and ABS transactions. Trigger events may include:

- Arrears/default in payments of interest or principal on the part of the issuer/borrower.
- Restructuring of the debt instrument due to significant financial difficulties on the part of the issuer (of a security) or debtor (of a loan).
- Increased probability of a restructuring procedure.
- Increased probability of insolvency.

The trigger events are operationalised through a combination of rating and fair value changes. To achieve this, the individual securities are split into three groups (listed and unlisted equity instruments and debt instruments) that are the basis for further individual impairment reviews. If trigger events are found, an impairment affecting the income statement is made and the corresponding claim is deemed to be non-performing. For AFS positions, if no trigger event is found but the fair value is below the amortised acquisition cost, the revaluation reserve is charged. The impairment amount is determined from the difference between the amortised acquisition cost and the fair value.

The total amount of the loan loss provisions, insofar as they relate to claims on the balance sheet, is deducted from the respective balance sheet items. However, provision for risks in off-balance-sheet business – guarantees, endorsement liabilities, lending commitments – is shown as a provision for credit risks.

In accordance with the Group's write-down policy, impaired positions are written down to the net present value of the claim two years after the notice of termination using existing valuation allowances (SLLPs/PLLPs impaired). Amounts recovered on claims written down are recognised in the income statement.

The tables below on loan loss provisions show the total amount of non-performing claims or those in arrears in the IFRS categories LaR (loans) including the related loan loss provisions with the corresponding write-downs grouped by sector and country of residence of the respective borrower.

Loans in arrears refer to all loans that are overdrawn by at least one day up to 90 days and are not defined as loans in default under consideration of the minimum threshold (2.5% of the limit or €100).

The table below sets the on-balance and off-balance sheet total claims from non-performing claims and those in arrears against the loan loss provisions, net allocations and direct write-downs. The following definitions are used here:

- **SLLP on-balance** is the sum of specific loan loss provisions for significant claims, determined on the basis of individual cash flow estimates.
- **PLLP impaired on-balance** is the sum of portfolio loan loss provisions for insignificant non-performing claims, determined on the basis of internal risk parameters per portfolio.
- **SLLP and PLLP impaired off-balance** is the total sum of provisions for significant and insignificant off-balance sheet claims. These provisions are determined in the same way as on-balance sheet claims.
- **GLLP/PLLP non-impaired (NI) on-/off-balance** is the sum of general loan loss provisions relating to claims in arrears.
- The **net additions** column shows the net position from additions and reversals of loan loss provisions for on-balance and off-balance sheet transactions. This does not include direct write-downs and recoveries on written-down assets. These are shown separately in the columns **Direct write-up/downs** and **Recoveries on written-down assets**.

Table 25: Non-performing and in-arrears loans by sector

Sector €m	Non-performing loans	SLLP on- balance	PLL impaired on-balance	SLLP+PLL impaired off-balance	Direct write-up/ -downs
Agriculture and forestry	18	5	2	0	1
Fisheries	0	0	0	0	0
Mining and quarrying of stone	3	1	1	0	0
Manufacturing industry	2,097	980	51	101	67
Energy and water supply	137	24	1	4	3
Construction	397	179	17	13	9
Trade, maintenance and repair of motor vehicles and consumer goods	615	311	39	13	39
Hotels and restaurants	189	67	8	0	3
Transport and communication	4,015	1,314	8	12	47
Banking and insurance	953	447	3	11	28
Real estate <sup>1</sup>	7,190	2,439	55	43	75
Public sector <sup>2</sup>	7	2	0	0	0
Education and training	11	2	1	0	2
Health, veterinary and social work	235	51	7	3	30
Other public and personal service activities	303	73	29	5	40
Private households	1,399	64	546	2	110
Non-profit organizations	23	1	0	0	0
<b>Total 2012</b>	<b>17,591</b>	<b>5,958</b>	<b>769</b>	<b>206</b>	<b>453</b>
<b>Total 2011</b>	<b>18,749</b>	<b>6,050</b>	<b>974</b>	<b>346</b>	<b>590</b>

Table 25 continued:

Sector €m	Loans in arrears	GLLP/PLL NI on-/off-balance for loans in arrears	Net additions	Recoveries on written-down assets
Agriculture and forestry	24	0	1	0
Fisheries	0	0	0	0
Mining and quarrying of stone	23	0	1	0
Manufacturing industry	502	2	39	1
Energy and water supply	105	1	-19	0
Construction	62	0	46	0
Trade, maintenance and repair of motor vehicles and consumer goods	692	2	42	0
Hotels and restaurants	25	0	5	0
Transport and communication	848	22	696	0
Banking and insurance	346	1	54	188
Real estate <sup>1</sup>	496	5	574	11
Public sector <sup>2</sup>	6	2	5	0
Education and training	3	0	-5	0
Health, veterinary and social work	71	0	2	0
Other public and personal service activities	85	1	-7	0
Private households	740	13	155	17
Non-profit organizations	4	0	1	0
<b>Total 2012</b>	<b>4,032</b>	<b>50</b>	<b>1,590</b>	<b>217</b>
<b>Total 2011</b>	<b>3,339</b>	<b>35</b>	<b>1,163</b>	<b>181</b>

<sup>1</sup> Including the rental of movable property and business service deliveries.<sup>2</sup> Including defence and social security.

Commerzbank bases its definition of the total sum of non-performing claims and claims in arrears on its accounting. Pursuant to section 315a.1 of the German Commercial Code, the Commerzbank Group issues consolidated financial statements based on International Financial Reporting Standards (IFRS). For this reason, the book values according to IFRS are applied for the total amount of non-performing claims and claims in arrears. Credit risk mitigation techniques which can mitigate risks for the purposes of determining the capital requirement are not relevant for the determination of the claim amount for accounting procedures.

The total non-performing claims and claims in arrears (loans and securities) amount to €21.6bn, whereby €17.6bn falls to the default portfolio (non-performing loans) and approximately €4bn falls to loans in arrears. In addition to the loan loss provisions presented below, collateral value is also held against the total non-performing claims, which is taken into account accordingly in the calculation of the SLLP, PLLP and GLLP. The amounts recovered from written-down claims amounting to €217m are booked as income in the loan loss provisions.

**Table 26: Non-performing and in-arrears loans by country cluster**

Country cluster €m	Non-performing loans	SLLP on-balance	PLLP impaired on-balance	SLLP+ PLLP impaired off-balance	Direct write-up/-downs	Loans in arrears	GLLP/PLLP NI on-/off-balance for loans in arrears
Germany	8,224	2,570	540	155	289	2,590	33
Western Europe (excl. Germany)	6,640	2,362	9	40	127	326	3
Central and Eastern Europe	1,219	511	218	7	0	717	12
North and South America	1,153	377	1	4	18	130	1
Asia	285	111	0	1	17	182	0
Other	69	27	1	0	1	88	0
<b>Total 2012</b>	<b>17,591</b>	<b>5,958</b>	<b>769</b>	<b>206</b>	<b>453</b>	<b>4,032</b>	<b>50</b>
<b>Total 2011</b>	<b>18,749</b>	<b>6,050</b>	<b>974</b>	<b>346</b>	<b>590</b>	<b>3,339</b>	<b>35</b>

The breakdown by country cluster reflects the Commerzbank Group's focus on Germany and selected markets throughout Europe. This means that the vast majority of the loan loss provisions fall to borrowers based in these geographical locations. In addition to Germany and Europe, the sum of specific loan loss provisions is also significant in North America. This is due to a higher number of individual default cases during the financial market crisis.

**Table 27: Development of loan loss provisions in 2012**

Type of provision €m	Opening balance	Additions	Reversals	Utilisation	Exchange rate changes	Other changes	Closing balance
SLLP on-balance	6,050	2,235	792	1,125	-6	-403	5,958
PLLP impaired on-balance	974	371	169	294	13	-126	769
SLLP+PLLP impaired off-balance	346	106	244	0	-1	-1	206
GLLP/PLLP NI on/off-balance	945	330	377	0	4	-37	866
<b>Total</b>	<b>8,315</b>	<b>3,042</b>	<b>1,582</b>	<b>1,419</b>	<b>11</b>	<b>-567</b>	<b>7,800</b>



The table only shows the development of loan loss provisions relating to the lending business, therefore only claims or loan commitments under the IFRS category LaR and their corresponding loan loss provisions are shown here. Details on the development of the loan loss provisions can be found in the Annual Report 2012.

Table 28 shows the realised losses over the entire period and compares these with the calculated expected losses of the non-defaulted portfolio at the end of the period. Losses incurred in the lending business refer to direct write-downs and the utilisation of valuation allowances for claims classified as IRBA positions according to Basel 2.5. Amounts recovered on written-down claims reduce the realised loss.

**Table 28: Expected and realised losses 2012**

Asset class €m	Expected loss as at 31.12.	Realised loss				
		Total	thereof utilisation of risk provision	thereof direct write- downs	thereof write-ups	thereof recoveries on written-down assets
Companies	1,024	487	571	115	1	198
Retail	178	192	160	48	1	15
IRBA exposures secured by mortgage liens	105	157	130	34	0	8
Qualified revolving IRBA-positions	0	25	20	5	0	0
Other IRBA exposures	74	10	9	9	1	7
Banks	128	3	3	0	0	0
Central governments	26	0	0	0	0	0
<b>Total</b>	<b>1,356</b>	<b>682</b>	<b>734</b>	<b>163</b>	<b>2</b>	<b>212</b>

Deviating from the Annual Report the expected loss reported in this Disclosure Report does not include SACR or securitisation positions. Also, due to the change to SACR (permanent partial use pursuant to section 70 SolvV) in 2009, the asset class investments is not shown here.

## Investments in the banking book

Investment risks or shareholder risks are potential losses arising from the provision of equity capital to investments as a result of a fall in their value. They can be caused by general market fluctuations or company-specific factors.

Commerzbank's portfolio of holdings is broken down in accordance with its significance to business policy, as follows:

The bulk of the investments held as financial assets (banking book) and all holdings in consolidated companies are designed to further the Bank's business objectives by supporting business lines/segments in the Bank (segment-supporting investments) or by having a strategic management or service function for the Group as a whole (other strategic investments).

There are also other non-strategic investments, some of which are allocated to the Non-Core Assets segment. A divestment concept is applied here, the aim of which is to optimise Commerzbank's market value, capital and income statement under appropriate market conditions.

#### **Tasks and organisation**

The investment risks are managed centrally as part of the ongoing management and monitoring of Commerzbank's holdings by the Development & Strategy department and locally by the segments. The central monitoring is primarily concentrated on the non-strategic investments while the strategic investments that form part of the Bank's core business are controlled on a decentralised basis by the Commerzbank segments responsible for them. The strategic investments are mainly majority holdings.

#### **Valuation and accounting principles**

Investments and shares in the banking book comprise equity instruments classified as available for sale (AfS) and those reported in the financial statements as fully consolidated or using the equity method are also included. Therefore all equity instruments not held in the trading portfolio are accounted for in this category.

Investments classified as AfS are reported at their fair value if it is available. Differences between historic costs and fair value are reported as equity capital not affecting net income. Not listed or listed but not traded equity instruments are reported at their historic costs if their fair value is not reliably determinable.

Listed investments are continuously monitored with regard to their market price performance. External analysts' opinions and share price forecasts (consensus forecasts) are included in the risk assessment. In addition, the listed holdings are monitored through impairment tests carried out at least quarterly by Group Finance in accordance with the impairment policy and tested for any significant qualitative or quantitative indicators (trigger events) of impairment. As soon as there are any indications of significant or lasting impairment, unrealised losses are written down.

Risks arising from unlisted holdings are subject to regular monitoring involving a database-supported year-end valuation, a monitoring of trigger events to each balance sheet reporting date and special monitoring of investments classified as critical. Various valuation methods (e.g. capitalised earnings value, net asset value, and liquidation value) are used to quantify the risks, depending on the book value, status (e.g. active, inactive or in liquidation) and type of business activity (e.g. operational, property holding company or holding) of the investment. If the intention is to sell the investment, it will be written down, if necessary, to a lower expected selling price; appreciation in value would be reported as revaluation reserve without net income effects. With companies valued using the equity method, the valuation is equal to the proportionate IFRS equity capital.

It should be noted at this point that the investments discussed in this section are those as defined in section 25.13 SolvV. This means that only equity investments that are not consolidated for regulatory purposes but relate to the companies covered by this report are shown. The definition of an investment in SolvV is wider than the usual accounting definition. For example, shares in limited companies (GmbHs), profit-sharing certificates with equity characteristics, promissory notes and derivative positions whose underlying is an investment position have to be classified as investments for regulatory purposes. Classical forms of investments nevertheless make up the majority of this SolvV asset class.

Table 29: Valuations of investment instruments

Investment group   €m	Book value (IFRS)		Fair value		Market value (listed positions)	
	2012	2011	2012	2011	2012	2011
<b>Segment-supporting investments</b>	<b>480</b>	<b>576</b>	<b>474</b>	<b>579</b>	<b>58</b>	<b>11</b>
thereof listed positions	60	4	58	11	58	11
thereof unlisted positions	421	572	417	567	–	–
<b>Other strategic investments</b>	<b>25</b>	<b>36</b>	<b>25</b>	<b>36</b>	<b>–</b>	<b>–</b>
<b>Other investments</b>	<b>210</b>	<b>540</b>	<b>220</b>	<b>496</b>	<b>58</b>	<b>103</b>
thereof listed positions	59	147	58	103	58	103
thereof unlisted positions	151	392	162	392	–	–
<b>Funds and certificates</b>	<b>1,027</b>	<b>1,166</b>	<b>1,027</b>	<b>1,166</b>	<b>20</b>	<b>13</b>
<b>Investments total</b>	<b>1,743</b>	<b>2,318</b>	<b>1,747</b>	<b>2,276</b>	<b>136</b>	<b>127</b>

The table shows the book value and fair value of the investment instruments under IFRS as reported in the financial statements for the investment groups relevant to the Group's objectives and strategy. For listed positions the market value is given as well. For listed investments book value under IFRS equals historic costs. Differences between book value under IFRS and fair value of listed positions result from the revaluation reserve.

For unlisted companies book values under IFRS are used as fair value. Special purpose vehicles (SPVs) are not shown as they are not investments pursuant to regulatory definitions. The positions shown under Other strategic investments as well as Funds and certificates are unlisted positions. All unlisted positions are classified as adequately diversified investment portfolios.

Shares in investment funds are allocated to the investment group funds and certificates if the precise composition of the investment fund is not known and an average risk weighting supplied by the investment company is not used for capital adequacy purposes. Only shares in investment funds that invest wholly or partly in investment instruments are relevant. Shares in investment funds that are solely invested in fixed-income securities (e.g. bond funds) are not reported here.

Table 30: Realised and unrealised profits/losses from investment instruments

€m	Realised profit/loss from sale/liquidation	Unrealised revaluation profit/loss		
		Total	thereof accounted for in Tier I capital	thereof accounted for in Tier II capital
2012	291	53	0	24
2011	9	135	0	61

This table shows the realised profits/losses from sales and the winding-up of investments during the reporting period.

The unrealised gains and losses refer to changes in the value of investments in the revaluation reserve that are not recognised in the income statement. Group companies included within the disclosure sold investments held in the banking book for a total profit of €291m in the past year. This profit was generated from sales revenue above the IFRS book values. Write-downs and write-ups of holdings recognised as income in 2012 are not considered as realised profits or losses. In addition, there is a deferred revaluation profit totalling €53m. From the unrealised revaluation profit, contributions of €24m from the six material entities at group level are taken into account in the Tier II capital.

## Securitisations

### Securitisation process

In the securitisation business Commerzbank acts in the three roles provided for in regulatory legislation, namely as originator, sponsor and investor.

- **Originator:** Parts of the Bank's own loan portfolio are placed selectively on the capital markets through securitisation transactions. This includes the securitisation of loans to SMEs placed on the market in February (CoSMO Finance II-2) and August 2012 (CoCo Finance II-1) for €2.0bn each respectively. Two securitisations of loans to SMEs in the amount of €2.0bn and €1.5bn were repaid in the reporting period. Four CMBS transactions of Hypothekenbank Frankfurt AG totalling €1.5bn were also repaid. As at the reporting date of 31 December 2012, risk exposures of €5.1bn (securitised volume €5.2bn) were retained out of the outstanding securitisation transactions, with by far the largest portion of these exposures (€4.9bn) consisting of senior tranches which are nearly all rated as good or very good. The table below shows the Commerzbank Group's securitisation transactions placed on the capital markets on the reporting date, which the Bank uses to free up regulatory capital:

**Table 31: Securitisation transactions with regulatory capital relief**

Securitisation programme <sup>2</sup>	Type <sup>1</sup>	Securitisation pool	Maturity	Issue currency	Current volume €m
CoSMO Finance II-1	S	Companies	2016	EUR	1,000
CoSMO Finance II-2	S	Companies	2022	EUR	2,000
Coco Finance II-1	S	Companies	2022	EUR	2,000
CB MezzCAP	T	Companies	2036	EUR	165
TS Co. mit One	T	Companies	2013	EUR	33
<b>Total Commerzbank AG</b>					<b>5,198</b>
Provide Gems 2002-1	S	RMBS	2048	EUR	135
Semper Finance 2006-1	S	CMBS	2048	EUR	554
Semper Finance 2007-1	S	CMBS	2046	EUR	310
Glastonbury Finance 2007-1	T	CMBS	2047	GBP	355
Opera Germany 2	T	CMBS	2014	EUR	560
Opera Germany 3	T	CMBS	2022	EUR	504
<b>Total Hypothekbank Frankfurt AG</b>					<b>2,418</b>
<b>Total</b>					<b>7,616</b>

<sup>1</sup> S = synthetic, T = true sale.

<sup>2</sup> Securitisation of own customer receivables.

- Sponsor:** Structuring, arranging and securitising receivables portfolios of Commerzbank's customers, particularly from the Mittelstandsbank and Corporates & Markets segments, is a key component of the structured finance product range. By securitising their own portfolios of receivables, i.e. selling their receivables on a non-recourse basis, Commerzbank's customers are able to tap alternative sources of funding on the capital markets. Typically special purpose vehicles (purchasing entities) are established to manage these assets. The purchases of receivables are funded primarily by the issue of short-term commercial paper (CP) under the Bank's asset-backed commercial paper (ABCP) programme Silver Tower (conduit). The commercial paper issued is rated by the rating agencies Standard & Poor's, Moody's and Fitch. As sponsor, the Bank is responsible for structuring and, as a rule, purchasing and refinancing the transactions. Commerzbank provides the special purpose entities with liquidity facilities so that they have access to short-term liquidity. All liquidity lines are counted in full when determining the risk-weighted exposures. The highly diversified portfolios of receivables generally derive from customers' working capital, such as trade receivables and car, machinery and equipment leases. The receivables portfolios therefore reflect the differing businesses of those selling the receivables. The securitisation exposures deriving from the strategic conduit Silver Tower largely consist of liquidity facilities and back-up lines. In addition to the strategic business of providing funding opportunities for customers of Mittelstandsbank as well as Corporates & Markets, the Bank also holds non-strategic business in the ABCP conduit Beethoven which is being further wound down. Due to the successful portfolio downsizing, only €229m of securitisation exposure to the Beethoven conduit now remains.

- **Investor:** In the past, the Commerzbank Group invested under both its regulatory trading book as well as its banking book in securitisation positions. Compared to 2011, existing positions were restructured and reduced on a large scale through the processing unit (Structured Credit Legacy). The Bank's internal credit risk strategy allows new securitised positions to be taken with the Bank's core customers on a restricted basis. The condition however is that there is a differentiated analysis and documentation of the risk profile of every securitised position, taking account of transaction risk drivers that may directly or indirectly impact on the securitised position's risk content. In line with the internal credit risk strategy, in 2012 a total of €75m was invested in a securitisation transaction based on car lease receivables for business customers.

#### **Risk management process:**

The internal processes for monitoring the risk profile of securitisation investments are based on the principles of the Minimum Requirements for Risk Management (MaRisk) in addition to section 25a and sections 18a and b KWG (or article 122a CRD) and apply equally to all securitisation exposures, irrespective of whether they are part of the regulatory trading or banking book, or whether Commerzbank acts as the originator, sponsor or investor.

The processes put in place by the Bank take account of the individual risk profile of securitisation exposures on the basis of a wide range of information sources, and ensure that various risks directly and indirectly affecting the probability of default of the securitised positions are monitored in a continuous and timely manner. This also includes carrying out regular stress tests that take account of macroeconomic factors and the individual risk profile of the securitised positions.

- **Originator:** The credit process for loans to customers does not distinguish between loans which the Bank will securitise at a later date and those for which it will continue to assume the risk. If the Bank retains securitisation exposures from its own securitisations, these remain subject to an ongoing credit process. The credit process is the same as that applying to investor positions. The amount retained in securitisation transactions in accordance with section 18a KWG is reviewed at least once annually or as circumstances require and is published in the Investor Report. A potential placement risk for Commerzbank's transactions is completely accommodated, as the receivables are included in full in the Bank's risk and capital management process up until the actual risk transfer by means of securitisation and placement.
- **Sponsor:** The customer transactions funded via conduits are subject to an ongoing credit process. A risk analysis of the transactions is conducted when the transactions are structured and again in regular reviews which are carried out annually and as circumstances require. This includes assigning a rating using the ABS rating systems certified by the banking regulators (internal assessment approach). This analysis covers all significant risk drivers of the securitised receivables portfolio (e.g. type of receivable, default rates, collateral provided, diversification, dilution risks, commingling risks) and of the securitisation structure (e.g. whether the creditor claims have a waterfall structure, credit enhancements). Qualitative risk drivers ascertained from an on-site visit to the seller of receivables as well as the seller's financial position are also taken into account. For trade receivables there are structure inherent covers through credit insurances taken into account in the rating model and credit analysis. Credit insurances are used in order to mitigate concentration risk. The main counterparties here are Euler Hermes Kreditversicherungs AG and Coface Kreditversicherung AG. Other factors which are not inherent in the structure of the securitisation but nevertheless affect its risk profile, for example potentially negative develop-

ments in the market environment which could have an impact on the securitisation transaction, are also considered. Before any purchase of customer receivables, the minimum conditions agreed in the contract documentation are reviewed and any non-qualifying receivables are excluded. After the receivables have been bought, their quality is reviewed continuously. If any potential problems come to light a full credit analysis of the structure is carried out.

- **Investor:** New purchases of securitisation exposures are subject to strict internal regulations. The purchase of ABS positions, and structures derived from them, which have not been structured by the Bank itself or jointly with other arrangers is prohibited across the Group. In the credit process applied to the Bank's securitisation portfolio, the risk profile of the securitisation positions is analysed continuously or as circumstances require. Commerzbank thus not only takes account of the original default risk of the securitised receivables, but also secondary risk that directly or indirectly affects default risk, such as market value risk, liquidity risk, refinancing risk, legal risk and operational risk. This process looks, for example, at the performance reports for the securitised receivables, changes in external ratings and movements in the market value of the securitisation exposures. In the case of resecuritisations, the analysis relates not just to the securitisation exposures contained in the pool but also covers the underlying portfolios on a risk basis (look through principle). As with securitisation exposures, the ranking of the individual tranches contained in the pool within a securitisation structure are taken into account in this analysis. For the preparing of a credit assessment a securitisation-specific rating system is used which has been developed internally within the Bank at the level of the individual tranche.

The liquidity risks of ABS transactions are modelled conservatively in the internal liquidity risk model. Firstly, a worst case assumption is made that Commerzbank has to take on the entire funding of the Silver Tower and Beethoven conduits. Secondly, the Bank's holdings of securitisation transactions only qualify as liquid assets if they are eligible for rediscount at the European Central Bank. These positions are only included in the liquidity risk calculation after applying conservative discounts.

#### **Procedure for determining risk-weighted exposure**

**Securitisation positions in the banking book** In general, Commerzbank applied in 2012 the regulations of the advanced IRBA for regulatory purposes, in accordance with the principle of accessory prescribed for securitisations in SolvV.

- **Originator:** The ratings-based approach is used for externally rated securitisation exposures that have been retained from the Commerzbank Group's own securitisation transactions. Capital is also held against synthetic securitisation tranches that have been placed on the market based on the risk weighting of the party providing the collateral. For the

majority of transactions the supervisory formula approach (SFA) is used and capital deductions are made for several other single securitisation positions due to a lack of external ratings. The requirements of section 262 SolvV regarding the investor shares that have to be considered by the originator do not apply due to the structure of the Commerzbank Group's transactions.

- **Sponsor:** The majority of sponsor transactions have to be allocated to the conduit business. Only in a few cases Commerzbank holds other sponsor positions. The internal assessment approach (IAA) is used for the Silver Tower and Beethoven conduits sponsored by Commerzbank, which largely involves ABS rating systems certified by the supervisory authority. Commerzbank used own rating systems for the conduits Silver Tower and Beethoven in the reporting year for the following classes of receivables: trade receivables, car finance and leasing, equipment leasing, consumer loans, receivables from film rights and capital commitments. The rating systems are developed in accordance with the stipulations of MaRisk, independently of the market side by Commerzbank's risk function. In accordance with SolvV the methodology follows the rating agencies Standard & Poor's, Moody's and Fitch. The systems were certified at the outset by BaFin and the Bundesbank and are subject to a regular review by the supervisors. In addition, the internal assessment approach is subject to an annual validation by Commerzbank's risk function. Internal Audit also performs regular reviews.

The various internal assessments take account of all features of the securitised receivables portfolio identified by the rating agencies as significant risk drivers as well as the specific structuring characteristics of the securitisation exposure. Other quantitative and qualitative risk components that are regarded as material by Commerzbank are also included in the assessment. These include, in particular, seller risks and qualitative risk drivers that are evaluated via structured qualitative questionnaires. The result of the rating process is a tranche-specific rating derived from the quantitative and qualitative results of the assessment approach which is based, depending on the approach, on the probability of default or expected loss (EL) of the securitised tranche. No external ratings from the above-mentioned rating agencies are available for the securitisation exposures subject to the internal assessment approach. As well as being used to determine regulatory capital requirements, the results of the internal assessment approach are also used within the internal capital model, in portfolio monitoring and in setting limits (ICAAP processes).

The approaches to modelling probability of default or expected loss (EL) for securitisation tranches differ depending on the type of securitised asset class. In the case of the asset classes trade receivables, car finance and leasing, equipment leasing and consumer lending, a range of different stress factors used by the rating agencies (e.g. concentration risks, default risks, dilution risks and interest rate risks), as well as additional quantitative and qualitative modelling components devised by the Bank, are used depending on the main risk drivers for the relevant transactions. When calculating loss buffers, stress factors are determined individually for different securitised asset types on the basis of the risk profiles of the securitisation transactions. The quantitative assessment of the risk of securitisation positions based on securitised capital commitments and receivables from film rights is based on a Monte Carlo model. As a result, pre-defined stress factors are not used to derive loss buffers for any of these internal assessment procedures.



Additionally, Commerzbank acts as a sponsor for some further transactions. Only in a few cases the supervisory formula approach (SFA) respectively a capital deduction as a result of the lack of an applicable external rating is used.

- **Investor:** For investor positions, external ratings are generally available, which lead to the ratings-based approach (RBA) being applied. Commerzbank takes account of all available external ratings from the three rating agencies Standard & Poor's, Moody's and Fitch irrespective of the type of receivables securitised and the type of securitisation exposure. The EIF (European Investment Fund) has provided a bilateral, directly-enforceable and irrevocable guarantee for a part of Hypothekbank Frankfurt International SA's investor positions. The underlying assets of the guaranteed securitisation exposures are loans to small and medium-sized companies from various European countries. The guarantee is taken into account in the calculation of RWAs by substituting the risk weighting of the EIF for the risk weighting of the securitisation. In only a few cases a capital deduction as a result of the lack of an applicable external rating is used.

Companies which are consolidated within the Commerzbank Group for regulatory purposes may, as part of the Group-wide business and risk strategy, on occasion act as investors in securitisation transactions in which the Bank is acting as sponsor or originator. Commerzbank AG and Hypothekbank Frankfurt International SA currently hold securitisation exposures from securitisation transactions, acting in the role of sponsor or originator. All retentions or repurchases of securitisation exposures from the Bank's own securitisation transactions with recognised regulatory risk transfer and securitisation exposures from transactions where Commerzbank has acted as sponsor are subject to the calculation of the regulatory capital requirement. In the case of transactions without recognised regulatory risk transfer, the regulatory capital requirement is determined for the securitised portfolio.

**Securitisation exposures in the trading book** As of 31 December 2012, only securitisation positions which are hedged against performance-induced market risks by means of credit default swaps and total return swaps with counterparties of good credit quality as well as securitisations allocated to the correlation trading book are included in the trading book. The capital adequacy requirements are determined by application of section 303 in conjunction with section 255 SolvV.

#### **Accounting and measurement policies**

In true sale or synthetic securitisation transactions via special purpose vehicles, the IFRS accounting regulations require the Bank to review, in accordance with SIC 12 (Standing Interpretations Committee), whether or not the securitising special purpose entities need to be consolidated. This review process is centralised in Commerzbank Group in the accounting department. The central unit is informed of the establishment or restructuring of a special purpose entity and carries out a review on the basis of the information submitted to it to determine whether the special purpose entity needs to be consolidated or not.

- **Originator:** If the special purpose vehicle is consolidated as part of the Commerzbank Group, no further derecognition test is carried out under IAS 39 rules and the asset is not derecognised. If the special purpose vehicle does not have to be consolidated, in true sale securitisations the possible derecognition of the securitised asset from the balance sheet is assessed using the risks and rewards of ownership as the primary derecognition criterion and the control concept as the secondary derecognition criterion (IAS 39.15 ff.) and, if appropriate, a derecognition or partial derecognition (continuing involvement) is reported. In the case of synthetic securitisations, the underlying assets always remain on the balance sheet and, as with securitised assets in true sale securitisations which are not derecognised, are reported in their original IFRS category. These assets continue to be accounted for in accordance with the rules for this IFRS category. When securitised assets are derecognised, any resultant gains or losses are reported in the income statement. In some cases, the derecognition of assets may lead to the first-time recognition of new exposures, for example bonds issued by special purpose vehicles. Under IFRS these exposures are categorised on the basis of the intention with which the securities were acquired and the type of securities in one of the three IAS 39 categories (held for trading, loans and receivables or available for sale). Please refer to Note 5 in the IFRS consolidated financial statements for a detailed explanation of the classification rules and the related valuation procedures. No securitisation transactions leading to derecognising of assets were carried out in the period under review. As a result, no gains or losses were realised from the sale of assets in connection with securitisation transactions during the reporting period.

The securitising special purpose entities for the following transactions are currently consolidated for accounting purposes: Cosmo Finance II-1 Ltd., Cosmo Finance II-2 Ltd., Coco Finance II-1 Ltd., CB MezzCAP Limited Partnership, TS Co. mit One GmbH, Semper Finance 2006-1 Ltd. and Semper Finance 2007-1 GmbH, Rügen Eins GmbH and TS Lago One GmbH. However, these entities are not consolidated for regulatory purposes. The securitising special purpose entities for the following transactions are currently not consolidated either for accounting purposes or for the purposes of regulatory capital adequacy requirements: Provide Gems 2002-1, Glastonbury Finance 2007 plc, Opera Germany 2 plc, Opera Germany 3 Ltd. If assets are earmarked for securitisation, this has no direct impact on their accounting treatment or measurement within the applicable IFRS categories.

- **Sponsor:** Under IFRS the funding entity Beethoven Funding Corporation is consolidated. In the case of Silver Tower, the funding entities Silver Tower Funding Ltd. and Silver Tower US Funding LLC are not consolidated, but some purchasing entities are consolidated. However, for regulatory purposes, no purchasing or funding entities for the Beethoven or Silver Tower programmes are consolidated. If a beneficiary special purpose entity is not consolidated under IFRS, the liquidity line provided to it is recorded in the Notes as a contingent liability in its full unutilised amount. Any utilised amount is recognised as a claim in the IFRS category loans and receivables.
- **Investor:** Under IFRS investor positions are categorised on the basis of the intention with which the securities were acquired and the type of securities in one of the three IAS 39 categories (held for trading, loans and receivables or available for sale). Please refer to Note 5 in the IFRS consolidated financial statements for a detailed explanation of the classification rules and the related valuation procedures. If the securitisation exposures

are traded on liquid markets with observable pricing, they are valued on the basis of independent market prices. If a direct measurement at market prices is not possible, the value of the securitisation exposure is determined with the help of valuation models. This involves the application of a discounted cash flow approach, with the cash flows and the other relevant parameters being based on data observable on the market. Moreover, the approach is calibrated with market data for application to similar securitisation structures. There were no significant changes in the methods used to value securitisation positions in the period under review.

### Quantitative information on securitisations

**Securitisation exposures in the banking book** The following information relates to transactions for which risk-weighted exposures are determined in accordance with sections 225 to 268 SolvV in conjunction with section 1b KWG. This also includes Commerzbank Group's own securitisation transactions for which capital relief is available for regulatory purposes.

The total volume of all retained or acquired securitisation exposures (on- and off-balance-sheet) was €16.9bn on the reporting date. This amount corresponds to the IRBA exposure after deducting eligible collateral.

In the following a breakdown of retained and acquired securitisation exposures by exposure type and the regulatory role assumed by Commerzbank is given.

**Table 32: Retained or acquired securitisation exposures in the banking book by type of exposure**

€m	Originator		Investor		Sponsor	
	2012	2011	2012	2011	2012	2011
Receivables <sup>1</sup>	4,789	4,592	70	144	990	1,598
Securities <sup>2</sup>	253	402	6,173	12,004	457	581
Other positions on-balance	0	0	54	1	0	0
Liquidity facilities	2	5	19	149	2,523	2,559
Derivatives <sup>3</sup>	2	6	531	2,427	1,018	14
Other positions off-balance <sup>4</sup>	0	0	6	129	19	1
<b>Total</b>	<b>5,045</b>	<b>5,005</b>	<b>6,853</b>	<b>14,854</b>	<b>5,007</b>	<b>4,754</b>

<sup>1</sup> E.g. drawings of liquidity facilities, cash loans, on-balance positions from synthetic transactions etc.

<sup>2</sup> ABS, RMBS, CMBS etc.

<sup>3</sup> Counterparty risk from market value hedges (interest rate and currency risks).

<sup>4</sup> Guarantees etc.

The table below provides a breakdown of the securitisation exposures shown above by type of underlying assets.

**Table 33: Retained or acquired securitisation exposures in the banking book by type of asset**

€m	Originator		Investor		Sponsor	
	2012	2011	2012	2011	2012	2011
Loans to companies/SMEs	4,676	4,348	1,301	2,511	259	612
Commercial real estate	200	459	142	427	8	55
Residential real estate	1	1	678	2,610	110	157
Consumer loans	0	0	3,859	4,532	0	0
Securitised positions	168	197	423	3,638	1,200	207
Leasing receivables	0	0	97	17	1,582	1,583
Trade receivables	0	0	0	91	1,540	1,716
Other	0	0	352	1,028	308 <sup>1</sup>	425 <sup>2</sup>
<b>Total</b>	<b>5,045</b>	<b>5,005</b>	<b>6,853</b>	<b>14,854</b>	<b>5,007</b>	<b>4,754</b>

<sup>1</sup> Including €137m film receivables.

<sup>2</sup> Including €161m film receivables.

Geographically speaking, the securitisation exposures originate predominantly from Germany (47%), USA (40%) and UK/Ireland (5%).

The next table provides a breakdown of acquired and retained securitisation exposures by risk weighting bands. Risk weightings are ascertained by applying the risk approach applicable to each securitisation exposure as per section 255 SolvV, which sets out a hierarchy of regulatory approaches for IRB securitisation exposures. If a securitisation exposure has an external rating of B+ or worse half of the exposure is deducted from Tier I capital and half from Tier II capital. The capital requirements are determined by the exposure and its risk weighting after taking account of any impairment.

Table 34: Retained or acquired securitisation exposures in the banking book by risk weighting band

2012						
Risk weighting band €m	RBA		IAA		SFA	
	Position value	Capital requirement	Position value	Capital requirement	Position value	Capital requirement
≤ 10%	4,663	28	1,694	11	4,572	26
> 10% ≤ 20%	550	6	1,248	19	256	4
> 20% ≤ 50%	321	9	153	3	0	0
> 50% ≤ 100%	352	18	174	13	0	0
> 100% ≤ 650%	211	43	0	0	25	3
> 650% < 1,250%	0	0	0	0	29	22
<b>Total</b>	<b>6,098</b>	<b>105</b>	<b>3,269</b>	<b>47</b>	<b>4,882</b>	<b>55</b>

2011						
Risk weighting band €m	RBA		IAA		SFA	
	Position value	Capital requirement	Position value	Capital requirement	Position value	Capital requirement
≤ 10%	5,904	34	1,640	11	920	5
> 10% ≤ 20%	5,426	57	1,550	20	0	0
> 20% ≤ 50%	433	11	146	4	259	6
> 50% ≤ 100%	1,078	64	451	36	24	2
> 100% ≤ 650%	505	119	0	0	0	0
> 650% < 1,250%	0	0	0	0	3	2
<b>Total</b>	<b>13,346</b>	<b>286</b>	<b>3,787</b>	<b>71</b>	<b>1,207</b>	<b>15</b>

As at 31 December 2012 the value of the securitisation exposures (including resecuritisations) deducted from equity was €1,061m (2011: €3,642m). After taking account of impairments, the capital deduction amounted to €521m (2011: €1.648m).

The next table provides a breakdown of acquired and retained resecuritisation exposures by risk weighting bands. The capital requirement values do not consider hedge positions or insurances.

**Table 35: Retained or acquired securitisation exposures in the banking book by risk weighting band**

2012 Risk weighting band €m	RBA		SFA	
	Position value	Capital requirement	Position value	Capital requirement
≤ 10%	0	0	0	0
> 10% ≤ 20%	12	0	0	0
> 20% ≤ 50%	227	7	998	18
> 50% ≤ 100%	4	0	0	0
> 100% ≤ 650%	355	87	0	0
> 650% < 1,250%	0	0	0	0
<b>Total</b>	<b>598</b>	<b>95</b>	<b>998</b>	<b>18</b>

2011 Risk weighting band €m	RBA		SFA	
	Position value	Capital requirement	Position value	Capital requirement
≤ 10%	0	0	0	0
> 10% ≤ 20%	112	2	1,622	26
> 20% ≤ 50%	442	11	0	0
> 50% ≤ 100%	68	5	0	0
> 100% ≤ 650%	379	65	0	0
> 650% < 1,250%	9	2	0	0
<b>Total</b>	<b>1,009</b>	<b>84</b>	<b>1,622</b>	<b>26</b>

The table below shows the outstanding volumes of Commerzbank Group's own securitisation transactions as originator with recognised regulatory risk transfer or ABCP-funded sponsor transaction.

**Table 36: Securitised assets outstanding**

€m	Originator Traditional		Originator Synthetic		Sponsor ABCP
	2012	2011	2012	2011	2012
Loans to companies/SMEs	198	211	5,000	4,510	0
Commercial real estate	1,419	2,967	863	1,029	0
Residential real estate	0	0	135	170	104
Leasing receivables	0	0	0	0	1,406
Trade receivables	0	0	0	0	1,110
Other	0	0	0	0	125 <sup>1</sup>
<b>Total</b>	<b>1,617</b>	<b>3,178</b>	<b>5,999</b>	<b>5,710</b>	<b>2,745</b>

<sup>1</sup> Including €36m film receivables.

In the period under review the portfolio incurred losses in the amount of €271m, mainly related to the Opera Finance Uni-Invest transaction. This transaction was closed in the reporting year after finishing the special servicing (realisation of collaterals).

On the reporting date, the securitised portfolios included non-performing loans or loans in arrears to the extent shown below.

**Table 37: Non-performing and in-arrears securitised assets<sup>1</sup>**

€m	Non-performing loans		Loans in arrears	
	2012	2011	2012	2011
Loans to companies/SMEs	6	75	13	85
Commercial real estate	19	24	12	2
Residential real estate	6	11	9	6
<b>Total</b>	<b>32</b>	<b>111</b>	<b>33</b>	<b>93</b>

<sup>1</sup> The figures in the table are based on the IRBA assessment.

In this context non-performing loans mean any assets with an internal rating equivalent to Standard & Poor's long-term C rating or worse. Loans in arrears include all assets where the customer is at least one day overdue on their payment obligations.

**Securitisation exposures in the trading book** The information in this section relates to securitisation exposures in the trading book for which risk-weighted exposure values are determined in accordance with sections 294-318 SolvV. This comprises securitisation exposures where Commerzbank acts as sponsor or investor.

The total net exposure of all retained or acquired securitisation exposures which are not included in the correlation trading portfolio was €105m at the reporting date, including hedge by credit derivatives according to section 299 SolvV. There are no further off-balance hedge positions. In addition, securitisation exposures with a net value of €73m were assigned to the correlation trading portfolio.

The table below shows the retained and acquired securitisation exposures which are not assigned to the correlation trading portfolio:

**Table 38: Retained or acquired securitisation exposures in the trading book by type of exposure**

€m	Investor	
	2012	2011
Securities	63	96
Derivatives	43	177
<b>Total</b>	<b>105</b>	<b>273</b>

The table below provides a breakdown of the securitisation exposures shown above by type of underlying assets.

**Table 39: Retained or acquired securitisation exposures in the trading book by type of asset**

€m	Investor	
	2012	2011
Securitised positions	5	38
Residential real estate	5	68
Commercial real estate	20	20
Loans to companies/SMEs	70	95
Other	6	52
<b>Total</b>	<b>105</b>	<b>273</b>

Based on the country of the securitised claim most of these securitisation exposures (93%) originate from the USA.

The next table provides a breakdown of acquired and retained securitisation exposures that are not assigned to the correlation trading portfolio by risk weighting bands. Risk weightings are ascertained by applying the risk approach applicable to each securitisation exposure as per section 255 SolvV in conjunction with section 303 SolvV, which sets out a hierarchy of regulatory approaches for IRB securitisation exposures. If a securitisation exposure has an external rating of B+ or worse half of the exposure is deducted from Tier I capital and half from Tier II capital. The capital requirements are determined by the net exposure and the position's risk weighting.

**Table 40: Retained or acquired securitisation exposures in the trading book by risk weighting band**

2012 Risk weighting band €m	RBA	
	Position value	Capital requirement
≤ 10%	0	0
> 10% ≤ 20%	9	0
> 20% ≤ 50%	14	1
> 50% ≤ 100%	0	0
> 100% ≤ 650%	0	0
> 650% < 1,250%	0	0
<b>Total</b>	<b>24</b>	<b>1</b>

2011 Risk weighting band €m	RBA	
	Position value	Capital requirement
≤ 10%	23	0
> 10% ≤ 20%	45	1
> 20% ≤ 50%	14	0
> 50% ≤ 100%	0	0
> 100% ≤ 650%	0	0
> 650% < 1,250%	0	0
<b>Total</b>	<b>83</b>	<b>1</b>

The next table provides a breakdown of acquired and retained resecuritisation exposures that are not assigned to the correlation trading portfolio by risk weighting band:



**Table 41: Retained or acquired resecuritisation exposures in the trading book by risk weighting band**

<b>2012</b>		
	<b>RBA</b>	
<b>Risk weighting band €m</b>	<b>Position value</b>	<b>Capital requirement</b>
≤ 10%	0	0
> 10% ≤ 20%	20	0
> 20% ≤ 50%	37	1
> 50% ≤ 100%	0	0
> 100% ≤ 650%	10	1
> 650% < 1,250%	0	0
<b>Total</b>	<b>67</b>	<b>2</b>

<b>2011</b>		
	<b>RBA</b>	
<b>Risk weighting band €m</b>	<b>Position value</b>	<b>Capital requirement</b>
≤ 10%	0	0
> 10% ≤ 20%	46	1
> 20% ≤ 50%	83	2
> 50% ≤ 100%	0	0
> 100% ≤ 650%	10	1
> 650% < 1,250%	0	0
<b>Total</b>	<b>139</b>	<b>4</b>

As at 31 December 2012 the value of the securitisation exposures (including resecuritisations) deducted from equity and the capital requirement were both €15m (2011: €51m).

## Market risk

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Market risk is the risk of financial losses due to changes in market prices (e.g. interest rates, commodities, credit spreads, exchange rates and equity prices) or in parameters that affect prices such as volatilities and correlations. The losses may impact profit or loss directly, e.g. in the case of trading book positions, or may be reflected in the revaluation reserve or in hidden liabilities/reserves in the case of banking book positions.

We also monitor market liquidity risk. Market liquidity risk is the risk of the Bank not being able to liquidate or hedge risky positions in a timely manner, to the desired extent and on acceptable terms as a result of insufficient liquidity in the market.

### Market risk strategy

#### Strategy

The market risk strategy is derived from the overall risk strategy and the business strategies of the individual segments and determines the market risk management objectives with regard to Commerzbank's key business activities. The core tasks of market risk management are the identification of all key market risks and drivers of market risk for the Group, the independent measurement and evaluation of these risks, and the risk/return-oriented management for the Commerzbank Group based on these results and evaluations.

Given the experience of the financial market crises, comprehensive guidelines relating to the management and monitoring of market price risks were implemented with the market risk strategy. These guidelines are focused on a wide range of qualitative and quantitative tools.

The quantitative parameters of Commerzbank Group's market risk strategy (value at risk limits in particular) are derived from the basic data defined in the overall risk strategy which ensures risk-bearing capacity based on the economic capital requirement. Within the scope of the planning process, this data is broken down into the individual segments/business areas giving consideration to the business strategies. Furthermore, the Bank manages and limits the market risk via scenario and sensitivity analyses.

A comprehensive set of qualitative rules in the form of market risk policies and guidelines as well as a maturity limit and minimum rating requirements aim to provide a qualitative framework for the management of the market risk.

The qualitative and quantitative factors limiting market risk are determined by the Board of Managing Directors and the relevant market risk committees. The assessment and monitoring of market risk takes place on a daily basis.

#### Organisation

The Board of Managing Directors of Commerzbank is responsible for ensuring effective management of market price risk for the entire Commerzbank Group. Specific levels of authority and responsibility in relation to market risk management were assigned to the appropriate market risk committees.

Within the Bank, various market risk committees are established in which business area representatives discuss current risk positioning issues and management measures with the Risk Function and with Finance and decide on action. Chaired by the risk function, the monthly meeting Group Market Risk Committee deals with the market risk positions in Commerzbank Group. Discussions in the Group Market Risk Committee centre on the monthly market risk report which is also presented to the Board of Managing Directors for them to discuss. The report summarises the latest developments on financial markets, the Bank's positioning and subsequent risk ratios. The aggregated view on market risk positions creates a basis for greater management across all types for risk relevant for the Bank. The Segment Market Risk Committee, which focuses on trading-intensive segments (Corporates & Markets and Treasury), meets once a week. In November 2012, a separate market risk committee, meeting once a month, was set up to manage market risks from non-core activities (Non-Core Assets).

The risk management process (risk identification, risk measurement, management, monitoring and reporting) is the responsibility in functional terms of market risk management, which is independent of trading activities. Central market risk management is complemented by decentralised market risk management entities at segment level as well as regional entities and/or subsidiaries. As the central and local risk management is closely interlocked with the business units, the risk management process already starts in the trading areas (front office as first line of defence). These trading units are responsible in particular for the active management of the market risk positions (e.g. mitigating or hedging measures).

## Risk quantification

### Value at risk

A standardised value at risk market risk model incorporating all positions is used for the internal management of market risk. Value at risk (VaR) quantifies the potential loss from financial instruments as a result of changed market conditions during a pre-defined time horizon and with a fixed probability.

The VaR market risk model used in Commerzbank is based on an historic simulation with a 1-year interval of historic market data. The historic simulation determines the profit and loss distribution of the current positioning through historic changes in market rates, prices and volatility used to evaluate the portfolio. Independent market data which is quality-assured on a daily basis is fed into a central market database at a standard defined time for this purpose. Market data is provided for all relevant positions in asset classes interest rates, credit spreads, equities, foreign currencies and commodities. The market data used comprises prices quoted directly on the market or auxiliary market data (e.g. yield and credit spread curves) based on internal methods. A proxy concept is used (derived from prices for comparable instruments) if no market data is available for individual exposures.

For internal management purposes, the model assumes a confidence level of 97.5% and a holding period of 1 day. In December 2011, the German Financial Supervisory Authority (BaFin) granted Commerzbank authorisation to use the VaR market risk model for the calculation of regulatory required capital. A 10-day holding period and confidence level of 99% are used for the regulatory capital adequacy requirement. These assumptions meet the requirements of the Basel Committee and other international standards on the management of

market risk. The VaR is calculated on a 1-day holding period for certain purposes, such as backtesting or disclosure. VaR is applied to all risk classes with reliable historic data. The value at risk concept allows the comparison of risks in the various business areas and enables many positions to be aggregated, taking account of correlations and compensations between different assets. This ensures a consolidated view of the market risk at all times. A comprehensive internal limit system broken down to portfolio level is implemented and forms an important part of internal market risk management.

The following table shows the aggregation of value at risk values on the basis of a confidence level of 99% and a holding period of 1 day.

**Table 42: VaR of trading book portfolios (based on regulatory capital requirement)**

VaR   €m	2012	2011
Minimum	21	38
Average	39	66
Maximum	70	102
<b>Year-end figure</b>	<b>28</b>	<b>59</b>

Value at risk (99% confidence level; 1 day holding period) reduces significantly from €59m to €28m. This is due mainly to an additional reduction in non-strategic portfolios. The VaR calculation is also no longer affected by extreme crisis days of 2011, as these are no longer contained in the model time series (older than 1 year).

As such, the risk relates mainly to interest rate and credit spread risk. To a lesser extent, value at risk is also affected by equity, foreign exchange, commodities and inflation risk.

Other risk ratios for regulatory capital adequacy have been calculated in accordance with the Basel Committee's requirements since the fourth quarter of 2011. In particular, these include the calculation of stressed VaR, which evaluates the risk arising from the current positioning in the trading book with market movements in a crisis period. Commerzbank uses the 2011 market movements to calculate the stressed VaR, which reflects the strong market volatility at the height of the euro crisis in the risk measurement.

In addition, the incremental risk charge and equity event VaR ratios quantify the risk of deterioration in creditworthiness and event risks in trading book positions. The latter is part of the regulatory VaR calculation and included in the values of the table above.

**Table 43: Stressed VaR of trading book portfolios**

VaR   €m	2012	2011 <sup>1</sup>
Minimum	24	49
Average	35	58
Maximum	52	72
<b>Year-end figure</b>	<b>35</b>	<b>52</b>

<sup>1</sup> Based on fourth quarter of 2011.

The two following tables show the incremental risk charge as at 31 December 2012.

**Table 44: Incremental risk charge**

IRC   €m	2012	2011 <sup>1</sup>
Minimum	121	222
Average	171	277
Maximum	309	322
<b>Year-end figure</b>	<b>150</b>	<b>254</b>

<sup>1</sup> Based on fourth quarter of 2011.

**Table 45: Incremental risk charge by sub-portfolio**

Sub-portfolio	IRC <sup>1</sup> €m	Average regrouping horizon months
Corporates & Markets	149	5.7
Treasury	47	12.0

<sup>1</sup> Without diversification between sub-portfolios.

Stressed VaR fell back by €17m to €35m year on year, and the incremental risk charge decreased by €104m to €150m. The reason for the fall in these two figures was the continued reduction in non-strategic risk positions. Furthermore, transactions based on valid attribution criteria were reclassified from the trading book to the regulatory banking book.

Commerzbank also takes account of a method for measuring market liquidity risk for economic capital adequacy. Based on an individual reduction profile, every portfolio is classified in terms of its liquidity using a market liquidity factor. Market risk based on a one-year view is weighted with the market liquidity factor to calculate the market liquidity risk.

At the end of 2012, Commerzbank provided €0.2bn in economic capital to cover market liquidity risk. Securities which are more susceptible to liquidity risk include in particular asset-backed securities and positions arising from restructurings. The fall in market liquidity risk was due in particular to the reduction in non-strategic investment positions.

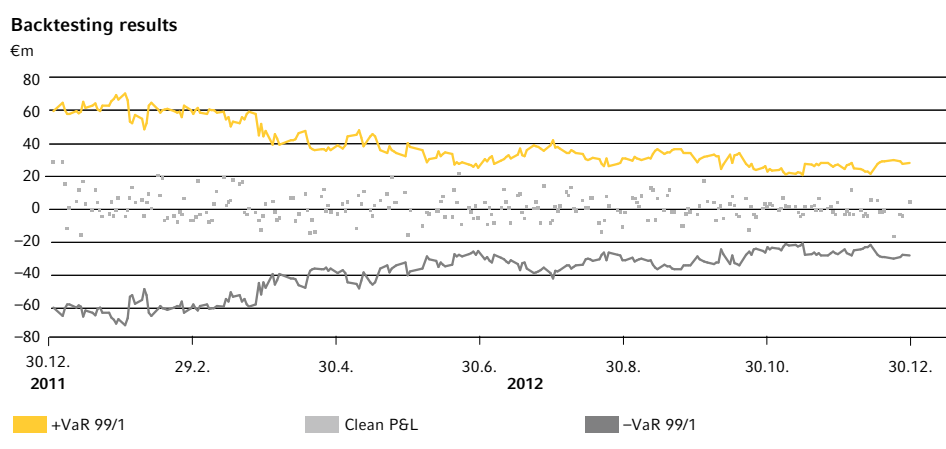
**Table 46: Market liquidity VaR**

Capital requirement   €m	2012	2011
Minimum	218	582
Average	415	780
Maximum	697	994
<b>Year-end figure</b>	<b>218</b>	<b>731</b>

Backtesting is one of the procedures used to check the reliability of the internal VaR model is checked on a daily basis. Backtesting involves offsetting the profits and losses predicted by our VaR model against hypothetical profits and losses from the Bank's current positioning in line with regulatory requirements. We also compare the actual profits and losses with those forecasted by the VaR model.

If the hypothetical or actual loss exceeds the risk predicted using the VaR model, this is referred to as a negative backtest outlier. If, however, the hypothetical or actual profit exceeds the predicted risk, this is referred to as a positive backtest outlier.

Analysing the results of backtesting provides important guidance on improving the market risk model and on checking parameters. It also serves as a basis for the supervisory authorities to assess the quality of the internal risk model. All negative outliers are classified under a traffic light system laid down by the supervisory authorities and are reported at Group level to the authorities with details of the size and cause of the failure. No negative backtest outliers were identified during 2012.



Furthermore, the individual components of the internal model are regularly validated for their appropriateness for risk measurement. These include the underlying model assumptions and parameters and the proxies used. All of the validations performed are reported on a quarterly basis to the Segment Market Risk Committee and the Board of Managing Directors. The identification and elimination of any model shortcomings are of particular importance. These are classified in terms of their impact on VaR and monitored using specific scenario scales. Against this background, other model adjustments were implemented in 2012 that have continued to improve the accuracy of risk measurement.

#### Measurement of financial instruments

The fair value of a financial instrument is the amount for which it could be exchanged between competent, willing, independent parties in an arm's length transaction. The most suitable measure of fair value is the quoted price for an identical instrument on an active market, e.g. an exchange. In cases where no quoted prices are available, valuation is based on quoted prices for similar instruments in active markets. To reflect the price at which an asset could be exchanged or a liability settled, asset positions are valued at the bid price and liability positions are valued at the offer price.

Where quoted prices are not available for identical or similar financial instruments, fair value is derived using an appropriate valuation model where the data inputs are obtained, as far as possible, from observable market sources. Occasionally, financial instruments are

valued using valuation models where no sufficient observable market data is currently available for the inputs. These valuations include a greater level of management judgement. However, such valuations seek to use market or third-party inputs to the maximum extent possible and rely as little as possible on company-specific inputs.

When determining fair values for those securities of Hypothekbank Frankfurt group and EEPK that have been rededicated into loans and receivables (IFRS) (see the appendix of the Annual Report 2012, note (81) Fair Value of financial instruments) the applicability of a valuation model in case of inactive markets is being checked in a two-step process. If this process in accordance with the Fair Value hierarchy of IAS 39 provides that an active market does not exist, a valuation model is being used to determine the fair value of the securities.

Valuation models must be consistent with accepted economic methodologies for pricing financial instruments and must incorporate all factors that market participants would consider appropriate in setting a price. All fair values are subject to Commerzbank Group's internal controls and procedures which set out the standards for independently verifying or validating fair values. These controls and procedures are managed or coordinated by the Independent Price Verification (IPV) Group within the finance function. The valuation models are independently reviewed and validated by the risk function on a regular basis.

Commerzbank's IPV process is founded on a risk-based approach. This approach also takes account in particular of internal factors such as changes in business strategy, the expansion or downsizing of business activities and external factors such as developments in markets, products and related valuation models. The regular independent price testing consists of two main components:

- Analysis of the prices and parameters.
- Determination of the associated fair value/P&L change.

A price is defined as a directly observable price, e.g. the settlement price of a future or the market price of a share. The products are valued at the bid or offer price as appropriate, depending on whether they are a long or a short position. A parameter is defined as an input to a valuation model for determining fair value, e.g. implied volatilities or dividends to value a share option. Derivatives valued using models are measured and tested at mid-market, plus any possible bid-offer reserves.

### **Stress test**

As the VaR concept gives a prediction of potential losses on the assumption of "normal" market conditions, it is supplemented by the calculation of stress tests. These tests measure the risk which Commerzbank is exposed to based on unlikely but still plausible events. These events may be simulated using extreme movements on various financial markets. The key scenarios relate to major changes in credit spreads, interest rates and yield curves, exchange rates, share prices and commodities prices. Examples of stress tests include price losses by all equities of 10% or a parallel shift in the yield curve of 50 basis points.

Extensive group-wide stress tests and scenario analyses are carried out as part of risk monitoring. The bank-wide stress test calculation is based on a combination of short-term stress test scenarios and scenarios based on macro-economic variables. The stress test framework is completed by portfolio-specific stress tests and ad-hoc scenario analyses.

Stress tests are intended to simulate the impact of crises and extreme market conditions on the Bank's overall market risk position. The impact on the various components of capital and income statement is also quantified in these tests.

In order to manage and monitor risks, short-term scenarios are calculated daily, compared to fixed limits and reported to the Board of Managing Directors. The longer-term scenarios are calculated on a monthly basis and discussed in the respective committees.

## Risk management

Internal risk management takes account of the requirements for economic risk-bearing capacity in the market risk strategy and therefore refers wholly to all banking and trading book positions. Regulatory risk measures that are not contained in economic risk-bearing capacity are limited and managed separately. These include, for example, stressed VaR and IRC.

For internal market risk management, Commerzbank sets its market risk limits by taking account of the economic capital requirement (risk-bearing capacity) at Group level. These are distributed using a combined bottom-up and top-down approach to the relevant segments and the portfolios within them. In addition to value at risk and stress tests, other market risk ratios, such as sensitivities, are an important part of market risk limitation.

The allocation of limits to individual business areas and portfolios then takes place on the basis of business strategy, achieved and expected risk/return ratio, and the market liquidity of investment positions. The limit utilisation is reported daily to the Board of Managing Directors and the various heads of divisions by the independent risk control unit. Any limit breaches are dealt with in a separate escalation process. After identifying the limit breach, action is taken by the front office and risk entities to bring the relevant portfolio back within limit. If the limit breach cannot be remedied within a few days, it is escalated by the market risk function with the assistance of the next highest hierarchy level.

The market risk units continuously monitor the risks and the positions of the business units. For this purpose, daily market risk information on the entire Group is generated for all of the relevant portfolios of Commerzbank. In addition to the various daily reports at portfolio level, market risk ratios at Group level are sent to the Board of Managing Directors and senior management on a daily basis. The daily reporting is supplemented by weekly and monthly reports to the responsible market risk committee and the Board of Managing Directors.



## Interest rate risk in the banking book

### Definition

The interest rate risk is one of the most significant financial risks posed by banking operations. This particularly includes the risk of value adjustments as a result of interest rate fluctuations over time. The maturity of interest positions and their refinancing structure are fundamental factors in the management of interest rate risks. The model includes assumptions on early repayments as well as on investor behaviour when deposits are open-ended. Furthermore, the risk of a flat or steep interest rate curve is covered via the management tool. The interest rate curve indicates the interest level over different maturities. Interest rate risks may also arise if positions are closed as a result of hedging transactions with a different pricing type to the underlying transaction (basis risks). Interest rate risks relate to Commerzbank's banking book and trading book. The interest rate risks of both books result in Commerzbank's overall interest rate risk.

### Organisation

The interest rate risk in the Commerzbank Group's banking book primarily results from the commercial business of the Group. Interest risks in commercial business arise if interest positions in the customer business are not hedged or are only partially hedged. Interest risks also arise from the investment models used by the central ALCO (Asset Liability Committee) which comprise in particular the investment and/or refinancing of products without contractually fixed interest rates (e.g. for equity capital, savings and sight deposits).

In Commerzbank Group, the interest rate risk in the banking book lies in the responsibility of Group Treasury within the scope of the business strategy. In addition to the positions of the central Group Treasury, the treasury activities of branches and all subsidiaries are also taken into consideration.

The Treasury's main tasks include the management of the balance sheet structure and of liquidity risks. The aim is to generate a positive interest margin from interest income and refinancing expenses. This gives rise to interest rate risks if positions are not refinanced with matching maturities and matching currencies.

### Quantification

Commerzbank jointly manages the interest rate risk from both the trading and banking book. The measurement of the interest rate risk of both books is completely integrated into the Bank's daily measurement and monitoring of risk. As with the measurement of trading book risks, the risk quantification in the banking book is also calculated using the value at risk method. Stress tests and scenario analyses are also calculated on a daily and monthly basis. For this purpose, the aforementioned stress test calculations are used. This standardised procedure is intended to ensure transparency of the interest rate risks in both the trading and banking book.

A further control variable for interest rate risks in the banking book are interest rate sensitivities. These indicate how the interest income varies following a change of the interest level by, for example, one basis point (bp). Interest rate sensitivities are also monitored on a daily and monthly basis. This monitoring takes place at both a portfolio and segment level as well as for Commerzbank Group. For management purposes, the interest sensitivities are limited to the various maturity bands at both a Group and segment level. The focus is particularly placed on interest sensitivities relating to long maturity periods.

For regulatory purposes, the influence of an interest rate shock on the economic value of the Group's banking book is simulated on a monthly basis. The applicable change in interest rates has been specified by the supervisory authorities at +200 basis points and -200 basis points. On this basis, an interest rate shift of +200 basis points would give a potential loss of €1,621m and a shift of -200 basis points would give a potential gain of €118m. These figures include the exposures of Commerzbank AG and significant subsidiaries. The potential gain and loss respectively are primarily caused by the movement of the euro and the US dollar yield curve. Changes in the UK, Japanese and Swiss yield curves are also important but to a lesser extent. The numbers represent a clear undershooting of the defined threshold value for a potential reduction in equity capital (20% for so-called outlier banks). Commerzbank manages its interest rate risk on the basis of total bank positions (including the trading book). This has to be kept in mind when assessing the simulation results.

**Table 47: Interest rate risk in the banking book**

€m	2012		2011	
	-200 bp <sup>1</sup>	+200 bp <sup>1</sup>	-200 bp <sup>1</sup>	+200 bp <sup>1</sup>
<b>Total</b>	<b>118</b>	<b>-1,621</b>	<b>1,829</b>	<b>-2,052</b>

<sup>1</sup> Interest rate shock.

**Table 48: Interest rate risk in the banking book by currency**

€m	2012	
	-200 bp <sup>1</sup>	+200 bp <sup>1</sup>
EUR	-667	-1,129
USD	662	-573
GBP	296	-165
JPY	-18	17
CHF	-112	191
Other	-44	38
<b>Total</b>	<b>118</b>	<b>-1,621</b>

<sup>1</sup> Interest rate shock.

### Management

Management of interest rate risks takes place using the corresponding limit systems within the scope of the risk management process for the banking and trading book. The risks are consolidated in the central risk management process. The central risk management is supplemented by a risk management unit for treasury within the market risk function.

Interest rate risks in the banking book are managed in line with the business strategy by means of maturity- and currency-congruent refinancing and the use of interest rate derivatives, e.g. interest rate swaps, which have sufficient market liquidity and allow prompt action to be taken. For long-term Bank products without fixed maturities, the Bank implements models to control the interest rate risks and stabilise the earnings performance (e.g. for savings and sight deposits or equity capital). These models are regularly monitored. The level of interest rate risks is both strategically and operatively restricted through risk policies and position limitations respectively.

## Liquidity risk

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Liquidity risk is defined in the narrower sense as the risk that Commerzbank will be unable to meet its payment obligations on a day-to-day basis. In a broader sense, liquidity risk is the risk that future payments cannot be funded as and when they fall due, in full, in the correct currency or at standard market conditions.

### Liquidity risk strategy

The global framework for liquidity risk management is the liquidity risk strategy which is derived from the Bank's business and risk strategy. The liquidity risk strategy is resolved by the Board of Managing Directors and contains guidelines for liquidity risk management and risk tolerance. It also takes the increasing regulatory requirements for liquidity risk management into account. As the ability to meet payment obligations at all times serves as an existential requirement, liquidity management focuses on a combination of liquidity provisioning and risk limitation. The guidelines of the liquidity risk strategy are supplemented by regulations such as the Liquidity Risk Policy, the Model Validation Policy and the Model Change Policy as well as the Limit Policy.

Group Treasury at Commerzbank is responsible for managing liquidity risks. Liquidity risks occurring over the course of the year are monitored by the independent risk function using an internal liquidity risk model. Key decisions on liquidity risk management and monitoring are made by the central Asset Liability Committee (ALCO). This includes, for example, the setting of liquidity risk limits and the definition of the liquidity reserve. At an operative level, additional sub-committees are responsible for dealing with liquidity risk issues at a local level and with methodological issues regarding the quantification and limitation of liquidity risks that are of lesser significance for the Group.

Within the scope of the contingency plan, the central ALCO can decide upon different measures to secure liquidity. This contingency plan is based on an integrated process which consists of the liquidity risk contingency plan and the supplementary liquidity contingency measures of the Treasury. This concept enables a clear allocation of responsibility for the process to be followed in emergency situations as well as the adequate definition of any action that may need to be taken.

### Risk quantification

As with the future Basel III ratios, ensuring Commerzbank's ability to meet its payment obligations is quantified and monitored on the basis of two interdependent concepts:

- Period of up to one year: Available net liquidity (ANL) concept.
- Period of over one year: Stable funding concept.

### **Available net liquidity concept**

Commerzbank's internal liquidity risk model is the basis for liquidity management and reporting to the Board of Managing Directors. Based on a reference date this risk measurement approach calculates the available net liquidity (ANL) for the next 12 months under various scenarios. Commerzbank's available net liquidity is calculated for various stress scenarios using the following three components: deterministic, i.e. contractually agreed cash flows, statistically expected economic cash flows for the relevant scenario, and the realisable assets in the relevant scenario.

The stress scenario underlying the model which is relevant for management purposes allows for the impact of both a bank-specific stress event and a broader market crisis. This assumes liquidity outflows from the withdrawal of deposits and drawdowns on credit lines as well as a severely restricted liquidity of assets due to a market crisis. The parameterisation of the stress scenario is derived from the risk tolerance that is determined in accordance with the overall risk strategy and updated as required. This also includes the definition of scenarios that are no longer covered by risk tolerance. The stress scenario is used to draw up detailed contingency plans. The stress scenarios are run daily and reported to management. The underlying assumptions are checked regularly and adjusted to reflect changed market conditions as necessary.

As part of liquidity risk measurement, the liquidity surplus (liquidity reserve) is also reported in the daily liquidity risk report, as well as its composition and the free availability (encumbrance) and level of liquid assets. The regular analyses (weekly and monthly reports) place particular emphasis on the quality of the assets included and on reasonable diversification.

In order to ensure solvency in every currency, the limit system of the internal liquidity risk model also comprises currency-specific limits. Due to the prompt and frequent informing of the Board of Managing Directors and the integration of ALCO, possible liquidity gaps can be recognised at an early stage and impeded using suitable measures. Movements in the liquidity surpluses in the internal stress scenarios relevant for management and in the survival period scenario according to MaRisk were always within the limits set by the Board of Managing Directors for the whole of 2012. Commerzbank's solvency was therefore sufficient at all times, not only in terms of the external regulatory requirements of the German Liquidity Regulation (figure as at 31 December 2012: 1.38), but also in terms of internal risk-setting.

### **Stable funding**

The Commerzbank Group's short-term and medium-term funding relies on an appropriately broad diversification in terms of investor groups, regions and products. Liquidity management also regularly analyses the structure of the various sources of funding of liabilities in order to actively manage the funding profile.

Long-term funding is mainly ensured by means of structured and non-structured capital market products that may or may not be collateralised, as well as customer deposits.

The stable funding approach identifies the structural liquidity requirement for the Bank's core lending business as well as those assets that cannot be liquidated within one year, and compares these to the liabilities available to the Bank over the long term (including core customer deposit bases). The results derived from this form the basis for the planning of issues on the capital market. The aim is to finance the Bank's illiquid assets and core business as much as possible with long-term liabilities in terms of volume and maturity.

### Stress tests

In order to ensure a sufficient basis for the prevention of possible liquidity bottlenecks even under difficult market conditions, Commerzbank continuously carries out stress tests. A distinction is in particular made between bank-specific, general stress scenarios and scenario combinations which are regarding all relevant projection periods.

In addition to the stress tests based on the ANL concept, the Bank conducts separate survival period stress calculations in terms of the MaRisk.

These stress scenarios that are relevant for management are also supplemented by additional inverse and adverse scenario analyses which exceed the defined risk tolerance. Amongst other things, these scenarios examine an unexpected withdrawal of customer deposits or of USD refinancing.

Central bank securities are used to cover the liquidity requirement in a stress scenario and these are brought into the calculation of available net liquidity (ANL) as balance sheet liquidity. In order to hedge against sudden unexpected payment obligations, e.g. from draw-downs on liquidity lines, the Treasury maintains a portfolio of disposable, highly liquid securities eligible for central bank borrowing purposes which are held by the central bank.

### Risk management

Group Treasury is responsible for the Group's liquidity management. Group Treasury is represented in all major locations of the Group in Germany and abroad and has reporting lines into all subsidiaries. Liquidity management comprises both operational and strategic components. Operational liquidity management encompasses management of daily payments, planning for expected cash flows and managing access to central banks. Liquidity management also deals with access to unsecured and secured sources of funding on the money and capital markets and the management of the liquidity portfolio. Group Risk Management covers strategic liquidity management and involves drawing up and evaluating maturity profiles for liquidity-relevant assets and liabilities, including modelling the proportion of customer deposits which will be available on a permanent basis (the core deposit base). The Group's issuing strategy thus generated is operationalised in Group Treasury. Group Finance is responsible for determining and allocating the liquidity costs that are included in the management of the Bank's business activities.

The Bank is looking closely at the central issues arising from Basel III, the offsetting of liquidity costs and the management of liquidity risk within the internal liquidity risk model. It is continuing to systematically enhance the range of management tools as part of a strategic project. The Bank is increasing the analysis options available for liquidity risk reporting by continuously developing the infrastructure used for this purpose.

## Operational risk

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Commerzbank actively measures and manages operational risk (OpRisk) using a group-wide consistent framework aimed at systematically identifying OpRisk profile and risk concentrations as well as defining and prioritising measures to mitigate risk.

Operational risk is defined according to the German Solvency Regulation as the risk of loss resulting from the inadequacy or failure of internal processes and systems, people or from external events. This definition includes legal risks; it does not cover reputational or strategic risks.

OpRisk and governance of the internal control system (ICS) are closely linked at Commerzbank both in terms of organisational structure and methodology. This close connection is due to the fact that the causes of many OpRisk cases are linked to the failure of control mechanisms. This means that an effective ICS plays a part in reducing or avoiding operational risk. Conversely, the systems for operational risk are such that the ICS can be geared so that it is risk-oriented and consistent with OpRisk management.

### OpRisk strategy

#### Strategy

Commerzbank's OpRisk strategy is approved on an annual basis by the Board of Managing Directors after it has been discussed and voted upon in the OpRisk Committee. It describes risk profile, key elements of the desired risk culture (including risk limit), management framework and measures by Commerzbank in respect of operational risk. In implementing the OpRisk strategy, Commerzbank pursues the following objectives:

- To largely prevent high OpRisk losses (before they materialise) using proactive measures and therefore to protect the Bank against serious negative effects.
- To highlight potential problem areas in the process organisation and hence providing a basis for optimisation.

#### Organisation

Commerzbank's OpRisk organisation has a clear allocation of responsibilities and tasks and creates the basic organisational framework and structures for targeted and effective OpRisk management and controlling. As such, OpRisk management is based on three consecutive levels (three lines of defence) which, when taken together, are crucial for reaching the given strategic aims:

- As the first line of defence, the segments and the Group Services, Group Management and Group Risk Management units have direct responsibility for identifying and managing operational risk in their areas of responsibility and provide effective and prompt segment risk management.

- The OpRisk & ICS area as the second line of defence provides uniform and binding methods and systems to the Bank's units to help to identify, evaluate and monitor operational risk. These are used throughout the Group and supplemented by tools and regulations of other monitoring functions and used to mitigate operational risk.
- Internal and external control bodies, such as the internal auditors, are the third line of defence. They are charged with independently auditing OpRisk methodology and implementation in Commerzbank.

Chaired by the Group CRO, the Group OpRisk Committee meets four times a year and deals with the management of operational risks within Commerzbank Group. It also acts as the escalation and decision-making committee for key OpRisk topics that straddle all areas. The segment OpRisk committees deal with the management of operational risk in the relevant units, the structured analysis affecting the OpRisk topics for the unit in question (e.g. loss events) and the definition of subsequent measures or recommended action.

## Risk quantification

Commerzbank measures regulatory and economic capital for operational risk using the advanced measurement approach (AMA), which is based on quantitative and qualitative methods. In implementing the requirements of the Solvency Regulation, the capital charge determined using quantitative methods is supplemented by qualitative components. The AMA is applied throughout the Group following successful certification in 2012 from the German banking supervisory authority. The capital of subsidiaries not included in the AMA is calculated using the basis indicator approach (BIA) or as an outside AMA.

### Quantitative components

The AMA model's quantitative components include the internal and external OpRisk loss data as the basis for the mathematical/statistical modelling.

- Group-wide internal OpRisk loss data in line with Basel 2.5/Solvency Regulation is collected from a starting threshold of €5,000 in a Group-wide loss database.
- In order to model the fat tail of the loss distribution – i.e. the financial risk from infrequent major losses – the internal data is supplemented by external loss data from the Operational Riskdata eXchange Association, Zurich (ORX), a data consortium of international banks. It may provide further impulses for managing operational risk.
- For stochastic modelling, the data is grouped by combinations of business line, event type and region, with loss frequency modelled based on internal loss data, and distribution of loss level based on internal and external loss data.
- A modelling of insurance and alternative OpRisk transfers currently does not take place.

### Qualitative components

The qualitative methods complement the information resulting from quantitative model components and are aimed at establishing a consistent Group-wide assessment of the business environment- and internal control-factors:

- The risk scenario assessment represents an ex-ante risk assessment of operational risks. Based on expert opinions and in accordance with the requirements of MaRisk, they serve to identify exceptional but plausibly possible risk events which could jeopardise the Bank's existence or severely affect its results and incorporate these into modelling.
- The bonus/malus value system (BMV) provides incentives to reduce operational risk as well as to improve risk management by influencing the OpRisk capital of the relevant Group entities. Through BMV the business environment- and internal control-factors are included in the OpRisk model. The BMV takes into account the following qualitative OpRisk elements, which are not directly represented in the mathematical/statistical model:
  - Business Environment Assessment (BEA): This BMV element serves to identify quality weaknesses of the business environment- and internal control-factors as well as supervision failure. On this basis sources of operational risks can be identified. Since the end of 2012 BEA includes the annual ICS valuation and the results of the human resources risk report. Moreover, information relating to external events and information technology are collected by means of a standardised questionnaire.
  - Valuation of OpRisk management: The valuation of the active OpRisk management of the segments as well as the units Group Services, Group Management and Group Risk Management is executed by the OpRisk & ICS area on the basis of a consistent criteria catalogue.
  - Key Risk Indicators (KRI): The KRI method is part of BMV and is used as an early warning tool to timely identify threatening trends and developments.
  - Further BMV elements: Information on the resolving status of high risk audit issues as well as the assessment of contingency planning are also included in the BMV.
  - Top Level Adjustments (TLA): This BMV element is only used in well-founded exceptional cases in order to establish a risk buffer for extraordinary changes in the OpRisk environment and to include it in the OpRisk capital calculation at short notice. Currently no TLA is applied.

### Risk management

The management and limitation of operational risks differs systematically from limiting credit and market risk, since the relevant management units are not made up of individual clients or positions but internal processes. For this type of risk, the focus is on anticipatory management by the segments and cross-sectional units based on an overarching risk strategy for operational risks and their specific aspects.

OpRisk figures at Group level are managed through economic capital (ErC) and regulatory capital (RWA). Commerzbank uses various methods to manage OpRisk. These include:



- Annually evaluating the Bank's ICS and carrying out risk scenario assessments.
- Continual analysis of OpRisk loss events.
- Carrying out lessons learned activities for loss events  $\geq$  €1m.
- Systematically evaluating external OpRisk events of competitors.

A structured centralised and decentralised reporting procedure ensures that the management of the Bank and its segments, members of the OpRisk committees and the supervisory bodies are informed regularly, promptly and fully on operational risk. OpRisk reports are prepared on a monthly and quarterly basis and form part of the risk reporting process to the Board of Managing Directors and the Supervisory Board's Risk Committee. They contain the latest risk assessments of the segments, their main loss events, current risk analyses, development of the capital requirement as well as the status of implemented measures.

## Other risks

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In addition to those risks explicitly defined in the German Solvency Regulation, further risk types are also systematically and actively managed within Commerzbank Group. For details on other risks please refer to the Annual Report 2012.

# Appendix

## Consolidation matrix and material Group entities

While the Commerzbank Group's Annual Report is based on the group of consolidated entities under IFRS definitions, the information in this Disclosure Report relates to the entities consolidated for regulatory purposes.

Subsidiaries or controlled companies for the purposes of IFRS accounting that are not in the financial sector are not consolidated for regulatory purposes. They are, however, consolidated in the Group financial statements under IFRS.

The consolidation matrix on page 84 shows the regulatory consolidation categories for the various companies in Commerzbank Group. The material companies included in this Disclosure Report are shown individually in the upper part of the matrix.

The immaterial companies which are of lesser financial significance in accordance with the definition of materiality are shown in the lower part of the matrix.

The classification of the companies is based on section 1 KWG, supplemented by insurance companies and capital investment companies. The Commerzbank Group's investments that are not consolidated for regulatory purposes are not shown.

The Banks classification includes both universal banks and specialist banks. Financial companies include investment companies, holding companies and other financial companies.

The special purpose vehicles that are deemed to be controlled by Commerzbank AG under the criteria of SIC 12 are mainly securitisation vehicles and special funds consolidated under IFRS. 157 special purpose vehicles were consolidated under IFRS at the reporting date; there is currently no requirement to consolidate these vehicles for regulatory purposes.

Material companies of the Commerzbank Group are listed by name in the Company column in the consolidation matrix. The number of subsidiaries as well as investments of material companies which are relevant for regulatory purposes is shown, broken down into segments, by consolidation type in the Consolidation column. There are two types of consolidation for regulatory purposes: full and pro rata. Full consolidation is applied to subsidiaries and pro rata consolidation for qualified minority interests.

To avoid the deduction for investments pursuant to section 10.6 KWG, equity investments in institutions and financial companies may also be voluntarily consolidated on a pro rata basis.

The material entities in the Group – besides Commerzbank AG – are the following:

- BRE Bank SA is a major universal bank in Poland. The BRE Bank Group includes BRE Leasing Sp. z o.o. (one of Poland's leading providers of leasing services), Polfactor SA (one of Poland's leading providers of factoring services) and BRE Bank Hipoteczny S.A. (Poland's leading mortgage bank). BRE Bank also offers modern financial services for private customers in the Czech Republic and Slovakia under the mBank brand.
- comdirect bank AG, a company of the comdirect Group, is the market leader among Germany's online brokers. comdirect bank AG is a full-service bank and offers brokerage, banking and advice to its customers.
- Commerz Real AG manages assets of €36bn and is a provider of leasing and investment solutions.
- The business of Erste Europäische Pfandbrief- und Kommunalkreditbank in Luxembourg is focused on financing the public sector through loans to sovereigns, federal states, municipalities, public-sector entities, institutions and other public-sector bodies and to government bodies based in the EEA and OECD.
- Hypothekenbank Frankfurt AG is a specialist bank concentrating on real estate and public finance.

Table 49: Consolidation matrix

Company	Classification according to KWG	No.	Consolidation
<b>Material companies</b>			
Commerzbank AG	Provider of secondary services	14	full
	Financial services institutions	3	full
		33	deduction
	Financial companies	1	pro rata
		45	full
	Capital investment companies	1	full
		9	deduction
	Banks	2	pro rata
		5	full
		Special purpose vehicles	157
BRE Bank SA	Provider of secondary services	1	full
	Financial services institutions	1	deduction
		3	full
	Financial companies	7	deduction
		4	full
	Banks	2	full
comdirect bank AG	Insurance companies	1	deduction
	Banks	2	full
Commerz Real AG	Financial services institutions	1	deduction
		7	full
	Financial companies	177	deduction
		30	full
	Capital investment companies	2	full
Erste Europäische Pfandbrief- und Kommunalkreditbank AG	Banks	1	full
Hypothesenbank Frankfurt AG	Provider of secondary services	3	full
	Financial services institutions	15	deduction
		5	full
	Banks	2	full
<b>Immaterial companies</b>			
	Provider of secondary services	8	full
	Financial services institutions	1	full
		14	deduction
	Financial companies	46	full

Risk-weighted investments shown in the table below are investments that are consolidated under IFRS but not for regulatory purposes. They are allocated to the equity investments asset class under the Solvency Regulation and are treated like any other investment position in this asset class.

**Table 50: Investments consolidated under IFRS**

<b>Classification according to KWG</b>	<b>No.</b>	<b>Consolidation under IFRS</b>
Provider of secondary services	13	full
Financial companies	2	at equity
Capital investment companies	1	at equity
Other companies	8	at equity
Other companies	62	full

Information on the group consolidation of Commerzbank AG is set out in the notes to the Annual Report 2012 (Note 102: Holdings in affiliated and other companies).

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## List of abbreviations

ABCP	Asset-backed Commercial Paper
ABS	Asset-backed Securities
AfS	Available for Sale
ALCO	Asset Liability Committee
AMA	Advanced Measurement Approach
ANL	Available Net Liquidity
AUC	Area under the curve (concentration measure)
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht (Federal Financial Supervisory Authority)
BIA	Basisindikatoransatz (Basic Indicator Approach)
CCF	Credit Conversion Factor
CDO	Collateralised Debt Obligation
CISAL	Commerzbank International S.A., Luxembourg
CMBS	Commercial Mortgage-backed Securities
CP	Commercial Paper
CRMT	Credit Risk Mitigation Techniques
CRO	Chief Risk Officer
CVaR	Credit Value at Risk
EaD	Exposure at Default
ECB	European Central Bank
EEPK	Erste Europäische Pfandbrief- und Kommunalkreditbank AG in Luxembourg
EL	Expected Loss
ErC	Economically required Capital
GLLP	General Loan Loss Provisions
HGB	Handelsgesetzbuch (German Commercial Code)
IAA	Internal Assessment Approach
IAS	International Accounting Standards
IFRS	International Financial Reporting Standards
IRBA	Internal Ratings Based Approach
ISDA	International Swaps and Derivatives Association
ISIN	International Securities Identification Number
KRI	Key Risk Indicators
KWG	Kreditwesengesetz (German Banking Act)
LaD	Loss at Default
LaR	Loans and Receivables
LGD	Loss Given Default
LIP	Loss Identification Period
MaRisk	Mindestanforderungen an das Risikomanagement (Minimum Requirements for Risk Management)
NBFI	Non-Bank Financial Institution
NI	Non-impaired
OECD	Organisation for Economic Cooperation and Development
OpRisk	Operational Risk
ORX	Operational Riskdata eXchange Association, Zürich
P&L	Profit & Loss
PD	Probability of Default



PI	Portfolio Impaired
PortLLP	Portfolio Loan Loss Provisions
QSA	Quality Self-Assessments
RBA	Ratings Based Approach
RBC ratio	Risk-bearing capacity ratio
RMBS	Residential Mortgage-backed Securities
RW	Risk weight
RWA	Risk-weighted asset
S&P	Standard & Poor's
SACR	Standardised Approach to Credit Risk
SAO	Russian legal form of a limited company
SFA	Supervisory Formula Approach
SIC	Standing Interpretations Committee
SLLP	Specific Loan Loss Provisions
SMEs	Small and medium-sized enterprises
SoFFin	Sonderfonds Finanzmarktstabilisierung (Special Fund for Financial Market Stabilisation)
SolvV	Solvabilitätsverordnung (German Solvency Regulation)
Sp. z o.o.	Polish legal form of a limited company
SPV	Special Purpose Vehicles
VaR	Value at Risk
Zrt.	Hungarian legal form of a limited company

## Disclaimer

### Reservation regarding forward-looking statements

This report contains forward-looking statements on Commerzbank's business and earnings performance, which are based upon our current plans, estimates, forecasts and expectations. The statements entail risks and uncertainties, as there is a variety of factors which influence our business and to a great extent lie beyond our sphere of influence. Above all, these include the economic situation, the state of the financial markets worldwide and possible loan losses. Actual results and developments may, therefore, diverge considerably from our current assumptions, which, for this reason, are valid only at the time of publication. We undertake no obligation to revise our forward-looking statements in the light of either new information or unexpected events.

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