Earth. It's the place of origin and home to all known forms of life. When looked at from space, you can see it in all its beauty.

If you have big plans, you need to see the whole picture.

Disclosure report 2017.

Landesbank Baden-Württemberg

LBBW

2017

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1 General requirements (Article 431 – 434 CRR).

The Basel Committee on Banking Supervision (BCBS) has published a comprehensive package of reforms known as »Basel III« for the purpose of reinforcing regulation, supervision and risk management in the banking sector.

The Basel rules have been implemented as European law in Regulation (EU) No. 575/2013 of the European Parliament and of the Council (CRR – Capital Requirements Regulation), taking effect from 1 January 2014. The rules contained in the supplementary Directive 2013/36/EU (CRD IV – Capital Requirements Directive) were transposed into German national law with the publication of the CRD IV Implementation Act.

On 29 January 2015, the Basel Committee on Banking Supervision published further disclosure requirements under the title of »BCBS 309«, a large part of which was implemented into European law in Guideline EBA/GL/2016/11 published on 14 December 2016 by the European Banking Authority (EBA). These requirements had to be applied by banks as of the disclosure key date of 31 December 2017. Apart from new requirements in terms of content, the frequency of disclosure has also increased in respect of many disclosure topics.

In light of the above, LBBW is also applying EBA Guidelines EBA/GL/2017/01 which came into force on 31 December 2017 on LCR disclosure to complement the disclosure of liquidity risk management under Article 435 CRR.

These rules further specify and standardize disclosure pursuant to Part Eight of the CRR. Consequently, the present disclosure report includes new or amended tables in relation to last year's report.

Landesbank Baden-Württemberg (LBBW) prepares the disclosure report in aggregate form at group level in its function as a parent company in order to comply with the currently applicable requirements pursuant to Part Eight of the CRR in conjunction with EBA/GL/2016/11 and EBA/GL/2017/01. This report is based on the International Financial Reporting Standards (IFRS). In terms of qualitative disclosures, LBBW makes use of the possibility of referring to other disclosure reports to the extent that the information which they contain has already been published under other disclosure requirements.

In contrast to the LBBW Group's annual report, which also includes a risk and opportunity report, this report focuses on the regulatory requirements.

In addition, the separate financial statements prepared in accordance with the German Commercial Code (|Handelsgesetzbuch – HGB) and the remuneration report required under the Remuneration Ordinance for Institutions (Instituts-Vergütungsverordnung), which also includes the disclosures required under Article 450 CRR, as well as the results of the quantitative analysis for global

systemically relevant institutions as required by Commission Implementing Regulation (EU) No. 1030/2014, are published on LBBW's website.

According to a resolution of the Bundesbank's Expert panel of disclosure requirements, it is up to the banks whether they complete credit risk templates using COREP or FINREP data. Where FINREP data is used, this is indicated explicitly.

In accordance with paragraph 20 of EBA/GL/2016/11, LBBW does not disclose data for the previous reporting period when the disclosure of such data is required for the first time and does not subsequently comment on the change.

The figures published in the disclosure report have been rounded to the next million in accordance with commercial principles. Accordingly, rounding differences may arise through aggregation.

2 Risk management (Article 435 CRR).

2.1 Fundamentals.

Risk-oriented integrated bank management.

LBBW defines risk management as the use of a comprehensive set of tools with which to handle risks in the context of risk-bearing capacity and the strategy set out by the Board of Managing Directors. Any risks along with related earnings opportunities and growth potential will be entered into in a deliberate and controlled manner, in the context of an internal control process and precisely defined risk tolerance.

The internal risk control processes and risk-tolerance requirements therefore form the core elements of group-wide systems aimed at a risk-based integrated bank management and consist notably of the organizational and operational structures, the risk management and control processes, and internal auditing.

Risk strategy.

The Board of Managing Directors and the Risk Committee risk stipulate the principles of the risk management system by defining risk strategies that are consistent with LBBW's business strategy.

Risk strategy guidelines are defined in the Group risk strategy, which applies to the entire Group and across all risk types, in accordance with the Minimum Requirements for Risk Management (MaRisk). In this context, the Group risk strategy defines specifications on risk appetite from both qualitative and quantitative points of view that are to be observed in all business activities.

The quantitative part of risk appetite sets out concrete specifications in the form of thresholds for LBBW's material steering parameters – specifications are set out for times of normal business operations and well as under stress conditions.

As part of the quantitative risk appetite, the strategic limit system operationalizes the requirements and objectives defined in the business strategy for all material risk types covered by risk-bearing capacity. The upper risk limit for economic capital was defined by the Group's Board of Managing Directors, taking into account the aforementioned fundamental risk strategy requirements and the economic capital forecast for the coming five years for 2018, and allocated to the material risk types. Further details can be found in chapter »2.3 LBBW Group – risk situation«.

The liquidity risk tolerance caps the liquidity risk in the narrower meaning (i.e. it limits the risk of failing to meet payment obligations. Further information on this subject can be found in chapter 15 »Liquidity coverage ratio«.

The risk guidelines form the qualitative element of risk appetite. They constitute the main strategic principles and rules of conduct that are used for weighing up risks and opportunities within the LBBW Group. They contribute to the creation of a uniform risk culture and – in accordance with materiality principles – form the framework for the precise organization of processes and methods of risk management. This qualitative element of risk appetite is complemented by further guidelines, e.g. in the form of a Code of Conduct and Ethics which applies throughout the entire Group.

In addition, the specific risk strategies approved for each material risk type document the current and target risk profile of LBBW, specify customer-, product- and market-specific guidelines and thereby create the framework for medium-term planning together with the business strategy. Additional information on the specific risk strategies is provided in the chapters on the respective risk type.

Operational implementation of these requirements is monitored by target/actual analyses, monthly analyses of results, as well as strategic and operational limit systems.

2.2 Risk management systems.

Risk capital and liquidity management.

Capital management at LBBW is designed to ensure solid capitalization within the LBBW Group, both in times of normal business operations and under stress conditions. In order to guarantee adequate capital and the consequent permanent viability of LBBW from various perspectives, the capital ratios and structures are analyzed from an economic, present-value view point (1st steering group) as well as from a regulatory perspective (2nd steering group). Both steering groups focus on achieving the corporates objectives for normal business operations, while making provisions for adequate stress resistance under stress conditions.

LBBW's risk management procedures are appropriately structured on the basis of the type, scope, complexity and risk content of the business activities and business strategy. The structure takes account of MaRisk and other relevant statements by national and international regulatory authorities.

All the principal risks are included in the risk management procedures. The processes, procedures and methods are regularly reviewed to ensure their adequacy and permanently developed further. These reviews also take account of the findings of the audits and the SREP process of the European Central Bank (ECB), of the statutory auditor and the Group Auditing division and these findings are implemented accordingly.

Risk types.

The overall risk profile of the LBBW Group is ascertained annually by Group Risk Control on the basis of the Group risk inventory and is presented to the Board of Managing Directors in the form of a risk map for approval. Risk measurement of the principal subsidiaries from a risk point of view is based on the transparency principle; i.e. the types of risk identified as material in the respective companies are integrated in the Group-wide risk measurement of the respective type of risk. LBBW shows companies whose risks are regarded as immaterial in investment risk.

The following material risk types have been identified:

Risk types.

Risk category	Describes possible ...
Counterparty default risks	...Losses arising from the default or deterioration in the credit rating of business partners. ...Defaults by sovereign borrowers or restrictions on payments. ...Losses arising from shortfall in proceeds from the liquidation of collateral.
Market price risks	...Losses caused by changes in interest rates, credit spreads, equity prices, exchange rates, commodity prices, volatility. ...Problem of not being able to quickly close out larger positions at market value.
Liquidity risks	...Problems meeting payment obligations in the short term.
Operational risks	...Losses arising from the unsuitability or failure of internal processes and systems, people, or due to external events, including legal risks.
Investment risks	...Losses in the value of Group companies and equity investments not included in the above risk categories.
Reputation risks	...Losses caused by damage to the Bank's reputation.
Business risks	...Losses due to less favorable business performance than expected or from strategic errors, provided that they do not relate to the aforementioned characteristic banking risks.
Pension risks	...Increase in provisions for pensions.
Real estate risks	...Losses in the value of the Group's real estate holdings.
Development risks	...Losses resulting especially from potential plan variances in the project development business of LBBW Immobilien Management GmbH.
Model risks	...Losses that can arise as a result of decisions that are based on the result of models. Triggering factors could include errors in the concept, application and validation of models.

Figure 1: Material types of risk in the LBBW Group.

Economic perspective (1st steering group).

To ensure adequate capitalization from an economic point of view, risks across all material types of risk and subsidiaries are compiled throughout the Group and compared with the economic capital (aggregate risk cover). This calculation of risk-bearing capacity (RBC) is carried out at a very high confidence level and with comprehensive classification of the definition of capital taking into consideration subordinated liabilities.

The internal monitoring of this key figure using binding targets and tolerance levels ensures LBBW Group has adequate economic capital both in times of normal business operations as well as under stress conditions.

At LBBW, aggregate risk cover (ARC, corresponds to risk coverage potential as per MaRisk) denotes the equity restricted according to economic criteria which is available to cover unexpected losses. In addition to equity (as per IFRS including revaluation reserves), subordinated debt and the realized income statement result in accordance with IFRS are considered components of aggregate risk cover. Extensive conservative deductible items are also included in aggregate risk cover due to regulatory requirements.

Economic capital is calculated as a uniform risk measure at the highest level. This is deemed to constitute the amount of capital necessary to cover the risk exposure resulting from LBBW's business activities. In contrast with the capital backing stipulated by the regulatory bodies, it therefore represents the capital backing required from LBBW's point of view for economic purposes, which is calculated using its own risk models. It is quantified as value-at-risk (VaR) at a confidence level of 99.93 % and a one-year holding period for counterparty, market price, real estate, development, investment and operational risks, and, using simplified procedures, for other risks.

By contrast, the liquidity risks (within the meaning of the risk of not meeting payment obligations) are managed and limited in accordance with the quantitative and procedural rules defined in the liquidity risk tolerance.

The model risks are managed entirely via the model risk management process and the corresponding tools, wherein the identification and classification of models via model inventory and the independent validation unit of Group Risk Control play a prominent role.

The upper risk limit for economic capital (economic capital limit) as part of the quantitative risk tolerance represents the Group-wide overarching limit for all relevant quantified risk types. This limit reflects the maximum willingness of the LBBW Group to accept risk. In keeping with the conservative principle underlying risk tolerance, it is substantially below the aggregate risk cover and thus provides scope for risks arising from unforeseeable stress situations, which are also limited (stress resistance). In addition, the economic capital limit is verified on the basis of target figures from the capital planning process. On the basis of the upper economic capital limit, economic capital limits are defined for the various directly quantified risk types and for the other risks not quantified within a model approach. The risk-bearing capacity is monitored by Group Risk Control by means of a traffic light system. The respective traffic light thresholds are linked to the recovery plan pursuant to the German Recovery and Resolution Act (SAG) and tied to an escalation process. Risks within the framework of the LBBW Group's risk-bearing capacity are described before possible measures to limit risks (so-called gross presentation).

Regulatory perspective (2nd steering group).

Apart from the economic, present-value perspective, (1st steering group) LBBW's risk appetite and management concept also includes the regulatory steering group. Current compliance with the internal targets (tolerance limits, which far exceed the regulatory minimum requirements) is ensured by means of an ongoing monitoring process on the one hand, while ensuring the long-term achievement or fulfillment of the corporates objectives within the scope of the regulatory and economic capital planning process on the other. In addition, compliance with the internal targets also in case of adverse and stressed development is ensured by an analysis of planning and stress scenarios (stress resistance).

The LBBW Group particularly bases the coordination and definition of its internal targets on its CET 1 capital ratio (ratio of Tier 1 capital net of additional Tier 1 capital to risk exposure values) and the total capital ratio after full implementation of the CRR/CRD IV requirements (»fully loaded«).

Stress tests.

In addition to risk measurement tools and statistical indicators based on historical data, stress scenarios play an important part in risk assessment. They analyze in advance the impact of possible future economic volatility and market crises in order to establish whether LBBW is able to withstand extreme situations.

Stress tests are therefore an integral part of LBBW's risk management. The stress scenarios are arranged in such a way that the effects of exceptional but plausible events of different degrees of severity can be considered in terms of their impact on the economic and regulatory capital and on the liquidity situation. For this purpose, various methods ranging from a simple sensitivity analysis to complex macroeconomic scenarios addressing multiple risk types are applied. So-called inverse stress testing is also conducted regularly to examine which scenarios could threaten the existence of the LBBW Group.

In order to ensure risk-bearing capacity and regulatory capital ratios even in a stress case, so-called MaRisk stress scenarios are defined for the various risk types. These stress scenarios are economically geared to different types of risk, whose definition focuses in particular on LBBW's risk concentrations. In addition to the analysis of the economic and regulatory capital in the status quo, the Group's resistance to stress is also monitored on the basis of these scenarios. These also form the basis of the recovery plan pursuant to SAG. Overshoots are monitored and escalated by Group Risk Control and Financial Controlling using the traffic light system.

Committees.

The integrated risk and capital management is carried out by the Group's Board of Managing Directors. Among other things, the Asset Liability Committee (ALCo) supports the Board of Managing Directors in structuring the balance sheet, managing capital and liquidity, in funding and in managing market price risks. The ALCo prepares decisions in this respect that are subsequently met by the Group's Board of Managing Directors.

On matters relating to risk management and capital management under economic aspects, the Risk Committee helps prepare decisions for the Board of Managing Directors with regard to risk monitoring, the risk methodology and the risk strategy for the Group as a whole.

In view of the large number of requirements in regulatory banking law and accounting, a coordinating Regulatory/Accounting Committee has been established to ensure an early assessment of the requirements of relevance to managing the Bank and to take appropriate measures.

Capital allocation and longer-term strategic capital management is performed during the integrated annual planning process (with a five-year planning horizon). The plans are approved by the Group's Board of Managing Directors and backed by an ongoing monitoring process and intra-year forecasts. The Supervisory Board ultimately decides on the business plan.

2.3 LBBW Group - risk situation.

To sum up, it can be stated that the risk-bearing capacity of the LBBW Group was maintained without restriction during the entire 2017 financial year. The aggregate risk cover at year-end 2017 was increased further from the end of 2016. A strengthening of the capital base through the issue of new subordinated liabilities and simultaneous risk reduction led to a further improvement to 41.8% in the utilization of the aggregate risk cover compared to year-end 2016. Furthermore, stress resistance was maintained throughout the entire financial year.

EUR million	31 Dec. 2017 Absolute[1]	Utilization	31 Dec. 2016 Absolute[1]	Utilization
Aggregate risk cover	16 495	42 %	16 206	44 %
Economic capital limit[2]	12 800	54 %	12 800	56 %
Correlated total economic capital	6 903		7 111	
of which:				
diversification effects	- 446		- 422	
counterparty risk	3 326		3 899	
market price risk	1 974		1 659	
investment risk	35		47	
operational risk	781		716	
development risk	102		61	
real estate risk	162		186	
other risks[3]	970		965	

Figure 2: LBBW Group – risk-bearing capacity.

1 Confidence level 99.93 %/ 1-year holding period.
2 Individual risks types are capped by means of economic capital limits.
3 Other risks (especially reputation, business, pension and model risks)

The economic capital has declined by a total of EUR - 0.2 billion since year-end 2016. The decline in counterparty risk is largely as a result of changes in market data and portfolio changes. Market price risk is calculated as part of the risk-bearing capacity on the basis of the current amount at risk and the amount at risk calculated on the basis of long-term historical scenarios (including stress periods). Model adjustments within the scope of the annual model validation led to higher operational risk compared with the previous year.

Opportunities.

The relevant aggregate risk cover (ARC) for calculating risk-bearing capacity is defined as the lowest ARC of the following 12 months. Opportunities therefore occur for the ARC when the actual ARC outstrips the projected development or when the ARC forecast improves in the wake of a positive trend. This is particularly the case for market trends with a positive effect on earnings and capital figures (above all credit spreads) with lower allowances for losses on loans and advances due to the economic trend or with a better-than-expected business performance. Apart from market- and business-driven improvements, the ARC can be proactively strengthened by measures such as issuing subordinated capital.

The risk-bearing capacity situation is shaped by economic capital in addition to the aggregate risk cover. The development of economic capital depends on a large number of factors. An upbeat market for credit spreads, interest rates and volatilities may likewise bring about a reduction of economic capital as might, for example, an economy-fueled improvement in the portfolio quality.

In addition, the very low utilization of the aggregate risk cover creates capacities for potential new business from an economic point of view.

2.4 Risk management processes and reporting.

Risk management and reporting.

LBBW's risk management and monitoring is based on the guidelines of the risk strategy and the defined limits and approval powers.

At LBBW, transactions can only be entered into within clearly defined limits or approval powers and in accordance with the principles of the risk strategy. Within the defined framework, risk management decisions are made by the departments with portfolio responsibilities, maintaining the separation of functions; these decisions are monitored by central Group Risk Control. The risk control and risk management system set up for this purpose covers all material risks and the details specific to the risk types.

Potential concentration of risk receives particular attention. Concentrations tend to arise as a result of the synchronization of risk positions within one risk type. They can also be the result of common risk factors or interactions between various risk factors of different risk types. At LBBW, appropriate processes are used to identify and to deliberately manage risk concentration. Risks to the Group’s going concern status must be excluded. Differentiated monitoring processes (e.g. report on risk concentrations, stress tests) and limits (e.g. sector and country limits) are available for the purpose of monitoring this strategic requirement. Additional information on this is provided in the chapters on the respective risk type.

In all business decisions the effect of the transaction on LBBW's reputation is to be considered. Transactions that have a long-term negative impact on LBBW's reputation are avoided. The sustainability policy of the LBBW Group must be observed. It is the LBBW Group's intention to act in the best and long-term interest of its customers and stakeholders.

An overview of the structure and individual elements of the risk management system of LBBW is given in the following chart:

Risk management structure.

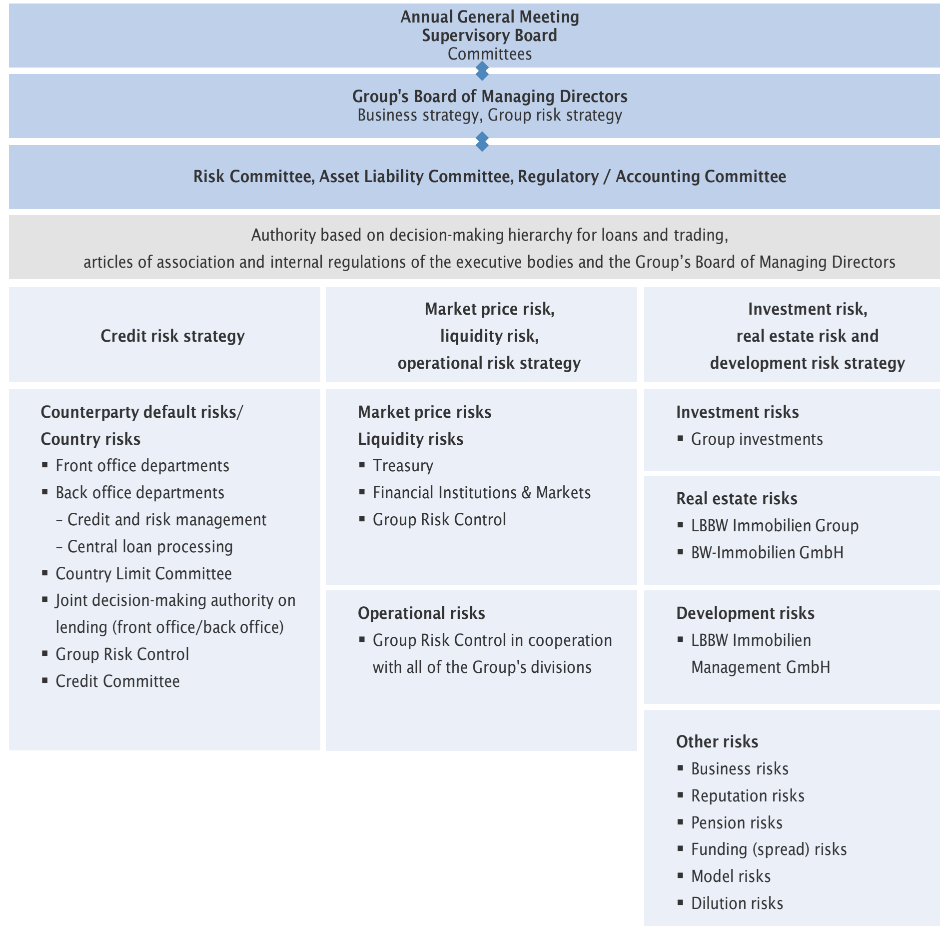

Figure 3: LBBW – risk management structure and elements.

Committees and reporting.

The members of the Group's Board of Managing Directors with responsibility for managing risks are supported in their decision-making by corporate bodies and a comprehensive risk and subject-specific reporting system. The overall risk report and the report to the Asset Liability Committee (ALCo) thus form the reporting system relevant to risk within the context of the requirements of MaRisk and of BCBS 239 (Basel Committee on Banking Supervision).

The Risk Committee comprises the board members with responsibility for capital markets business and asset management/international business, finance/strategy and risk management/compliance and auditing, in addition to divisional managers from Group Risk Control, Group Strategy and Financial Controlling, Treasury and Back Office. As an advisory committee, it prepares decisions for the Board of Managing Directors and supports it in risk monitoring, risk methodology and risk strategy for the Group as a whole. The monthly overall risk report and other reports prepared on specific issues as required form the basis for this.

The ALCo also has an advisory role and works on preparing decisions for the Group's Board of Managing Directors. The focus of the Asset Liability Committee is on strategic resource management for the Group as a whole. It supports the Board of Managing Directors, among other things in structuring the balance sheet, managing capital and liquidity as well as in funding and managing market price risks. The ALCo comprises the board members with responsibility for capital markets business and Asset Management/International Business and Finance/Strategy, in addition to divisional managers from Group Strategy and Financial Controlling, as well as Treasury. Group Risk Control and Finance also participate in the meetings.

The coordinating Regulatory/Accounting Committee evaluates at an early stage the requirements of the large number of provisions of banking supervisory law and accounting that are relevant for management purposes and takes the measures required. The committee comprises, among other areas, the board members with responsibility for capital markets business and asset management/international business, risk management/compliance and auditing, in addition to divisional managers from the Legal division, Information Technology, Finance, Group Risk Control, Group Strategy and Financial Controlling and Treasury.

Processes of adjustment.

New types of trading and credit product at LBBW are subject to a New Product Process that ensures the product is included in LBBW's various systems, such as accounting or Group risk control. Any potential legal consequences are also outlined.

The main focus is on trading products. If it is not possible to fully integrate the products into the model immediately, a step-by-step approach is taken in which the products are initially traded only under very strict supervision.

In the case of material changes in the set-up and procedural organization and in the IT systems, LBBW analyzes the potential effects on control procedures and control intensity within the framework of a pre-defined standard process.

Process-independent monitoring.

The Group Auditing division is a process-independent division that monitors the operations and business work flows, risk management and control and the internal control system (ICS) with the aim of safeguarding LBBW’s assets and boosting its operating performance. The Group Auditing division exercises its duties autonomously. The Board of Managing Directors is informed of the results of audits in written audit reports, which are discussed with the audited operating units. The Group Auditing division also monitors the measures taken in response to the audit findings.

The auditing activities of the Group Auditing division are generally based on an audit schedule, approved annually by the Board of Managing Directors, on the basis of a long-term risk-oriented plan, which records all the activities and processes of the LBBW Group, allowing for risk weighting in a reasonable period, but always within three years.

There were no changes in the heads of either the internal control functions, the risk management function, the compliance function or internal audit functions in the past financial year.

The Board of Managing Directors of LBBW regards the risk management procedures pursuant to Article 435 (1) e and f CRR as fundamentally appropriate in light of the type, scope, complexity and risk content of the business activities and the business strategy. The structure takes account of MaRisk and other relevant statements by national and international regulatory authorities. All the principal risks are included in the risk management procedures. The processes, procedures and methods are regularly reviewed to ensure their adequacy and permanently developed further. These reviews also consider and implement the findings of the statutory auditor and the Group Auditing division, as well as any comments made in the context of the SREP process of the European Central Bank (ECB). The risk declaration was approved by the Group's Board of Managing Directors.

2.5 Corporate governance rules.

The maximum number of directorships which members of the Board of Managing Directors and the Supervisory Board may hold is determined by the German Banking Act (KWG). Under Section 25c of the German Banking Act, the managers of a systemically significant CRR institution are not permitted to act as the managing director of another company or to be a member of the management or supervisory body of more than two companies.

For this purpose, multiple directorships count as a single one if they are held with companies,

- which belong to one and the same bank group, financial holding group or mixed financial holding group,
- which belong to the same institutional protection system or
- in which the institution holds a significant share.

A significant share is deemed to arise in particular if at least 10 % of the capital and/or voting rights of the company accrue to the CRR institution either directly or indirectly.

Under Section 25d of the German Banking Act, the members of the supervisory body of a systemically significant CRR institution are not permitted to simultaneously act as the managing director of another company or to be a member of the management or supervisory body of more than two companies. Similarly, a person who is a member of the management or supervisory body of more than four companies is disqualified from being a member of the supervisory body of a CRR institution.

The members of the Board of Managing Directors of Landesbank Baden-Württemberg hold the maximum number of directorships permitted under the German Banking Act. The members of the Supervisory Board have been duly informed of the maximum number of directorships permitted under the German Banking Act.

LBBW observes the requirements under Section 25c (2) No. 1 and Section 25d (3) No. 1 and 2 of the German Banking Act with respect to the non-compatibility of management and supervisory directorships.

	Number of executive and/or supervisory board directorships held in other undertakings in accordance with the rules pursuant to Section 25d (3) KWG	Number of directorships of management and/or supervisory bodies held in other undertakings, irrespective of whether the undertaking in question pursues commercial objectives or not
Christian Brand	4	4
Wolfgang Dietz	2	9
Helmut Himmelsbach	1	1
Bettina Kies-Hartmann	1	1
Fritz Kuhn	0	8
Klaus-Peter Murawski	0	5
Dr. Fritz Oesterle	4	4
Martin Peters	2	63
Claus Schmiedel	2	2
B. Jutta Schneider	1	1
Peter Schneider	4	9
Edith Sitzmann	0	4
Dr. Jutta Stuible-Treder	1	1
Burkhard Wittmacher	3	3

Figure 4: Number of directorships held by members of the Supervisory Board in management and/or supervisory bodies as per 31 Dec. 2017 (Article 435 (2) (a) CRR).

	Number of directorships held in management and/or supervisory bodies in accordance with the rules pursuant to Section 25c (3) KWG	Number of directorships of management and/or supervisory bodies held in other undertakings, irrespective of whether the undertaking in question pursues commercial objectives or not
Rainer Neske	3	3
Michael Horn	4 (of which an additional mandate approved by the ECB)	5
Karl Manfred Lochner	1	5
Dr. Christian Ricken	2	5
Thorsten Schönenberger	1	2
Volker Wirth	1	6

Figure 5: Number of directorships of management and/or supervisory bodies held by members of the Board of Directors as at 31 Dec. 2017 in accordance with Article 435 (2) (a) CRR.

Section 25c of the German Banking Act stipulates that managing directors must hold the necessary professional qualifications, be trustworthy and dedicate sufficient time to performing their functions. They are assumed to possess the necessary professional qualifications if they have sufficient theoretical and practical knowledge of the business concerned as well as managerial experience.

The Board of Managing Directors consists of several members. The members of the Board of Managing Directors are appointed for a maximum period of five years, after which they may be reappointed. A resolution approving the re-appointment of members of the Board of Managing Directors must be passed no earlier than twelve and no later than six months before the expiry of the previous appointment. Members of the Board of Managing Directors who have passed the age of 60 may be appointed or re-appointed for a period not extending beyond the month in which they turn 65. In exceptional cases, the Supervisory Board may also pass a resolution approving an appointment or re-appointment beyond this.

The selection process is governed by the statutory provisions contained in the German Banking Act and the bylaws of the Executive Committee, which performs the duties of a nomination committee in accordance with Section 25d (11) of the German Banking Act.

Under these rules, the Executive Committee is responsible for preparing the Supervisory Board's decisions on the appointment and dismissal of the members of the Board of Managing Directors as well as long-term successor planning for the Board of Managing Directors. To this end, it particularly identifies candidates for a position on the Board of Managing Directors and, in doing so, takes account of the balance and diversity of the knowledge, skills and experience of all the members of the Board of Managing Directors, prepares a job description with a candidate profile and specifies the amount of time required for performing the task.

In appointing member or planning successors for members of the Board of Managing Directors, the Supervisory Board takes into account to an appropriate extent diversity aspects as well as age, educational background, professional experience and gender.

The professional background of the members of the Board of Managing Directors is described in detail on LBBW's website.

LBBW's Supervisory Board has 21 members. The Chairman and Deputy Chairman of the Supervisory Board are elected from the Supervisory Board's own number on the basis of a proposal made by the shareholders' meeting in the absence of any requirements to the contrary in the Landesbank Baden-Württemberg Act. The members of the Supervisory Board must be reliable, possess the necessary expertise to assess and monitor the Bank's business in the performance of their supervisory duties and have sufficient time to perform their duties. They are not bound by any instructions. They must perform their duties impartially and responsibly.

At least one member of the Supervisory Board must possess expertise in the areas of accounting and the auditing of financial statements.

In the absence of any requirements to the contrary in the Landesbank Baden-Württemberg Act, the members of the Supervisory Board cannot be appointed for a period exceeding the conclusion of the annual general meeting at which a resolution is passed to ratify the activities of the Supervisory Board for the fourth year after the commencement of their term of office. They must be re-appointed no later than one month before the expiry of their term of office. Repeated appointments are possible. Upon the expiry of their term of office, the members of the Supervisory Board continue to perform their duties until the new Supervisory Board has convened.

The selection process is governed by the statutory provisions contained in the German Banking Act and the bylaws of the Executive Committee, which performs the duties of a nomination committee in accordance with Section 25d (11) of the German Banking Act.

Under these rules, the Executive Committee is responsible for preparing proposals for the election of members of the Supervisory Board. To this end, the Executive Committee takes account of the balance and variety of knowledge, capabilities and experience of all the members of the Supervisory Board, prepares a job description with a candidate profile and specifies the amount of time required for performing the task. The members of the Supervisory Board are elected by the shareholders' meeting unless they are required to be elected by the employees and in the absence of any requirements to the contrary in the Landesbank Baden-Württemberg Act. The owners have the right to submit nominations.

Moreover, the Executive Committee has defined a target for encouraging a greater proportion of women on the Supervisory Board as well as a strategy for reaching this target.

Furthermore, the Executive Committee assists the Supervisory Board with the regular evaluation, which must be conducted at least once a year, of the structure, size, composition and performance of the Board of Managing Directors and the Supervisory Board and submits relevant recommendations to the Supervisory Board. In doing so, the Executive Board ensures that individual persons or groups are unable to exert any influence on the decision-making processes within the Board of Managing Directors liable to have an adverse effect on the Bank.

In addition, the Executive Committee assists the Supervisory Board with the regular evaluation, which must be conducted at least once a year, of knowledge, skills and experience.

In addition, in accordance with Section 25d (11) sentence 2 no. 3 and 4 KWG, the Supervisory Board has established a process for the regular evaluation of the overall Board of Managing Directors. Based on the assessment carried out by the Supervisory Board, the structure, size, composition and performance of the Board of Directors as well as its knowledge, skills and experience were deemed to meet the requirements in law and under the articles of association.

Members of the Supervisory Board and of Board of Directors regularly take part in training events in order to keep up their professional qualifications and ensure they have the necessary expertise.

The Supervisory Board has established a Risk Committee from its own number. The Risk Committee comprises eight members. It elects a Chairman and a Deputy Chairman from its own number. The Chairman and the Deputy Chairman of the Risk Committee must possess banking expertise. The Risk Committee is managed by the Chairman or, in his absence, the Deputy Chairman.

In a total of nine meetings, the Risk Committee held in-depth discussions on the Bank's risk situation and risk management as well as its exposure for which reporting duties apply in accordance with the law, the articles of association and the bylaws, granting its approval where this was required in individual cases. Specifically, the Committee dealt with the Bank's credit, market price, liquidity, equity investment, legal, reputation and operational risks, which together with calculations of the Bank's risk-bearing capacity formed part of the regular risk reports of the Board of Managing Directors. Over and above this, the Committee confirmed that the incentives set by the remuneration system take account of the risk, capital and liquidity structure of the Landesbank as well as of the probability and due dates of earnings. The Risk Committee discussed the business strategy and, based on this, the uniform Group, market price and liquidity risk strategy and operational risk strategy with the Board of Managing Directors. Various portfolios were examined in detail in the light of economic or regulatory developments.

The Chairman of the Committee regularly reported to the members of the Supervisory Board on the Risk Committee's activities and the resolutions which it passed.

At its meetings, the Board of Managing Directors was kept regularly informed in detail and with minimum delay of LBBW's risk situation and risk management as well as the exposures requiring approval under the Bank's rules and, where necessary, granted its approval.

3 Scope (Article 436 CRR).

Unless otherwise indicated, all disclosures in this report relate to the regulatory basis of consolidation of the LBBW Group in accordance with Section 10a of the German Banking Act in conjunction with Article 18 et seqq. CRR as at 31 December 2017.

3.1 Application of waiver rule.

At the request of LBBW, the ECB upheld in April 2016 the option provided for in Article 7 (3) CRR, under which individual institutions may be excluded if organizational and procedural requirements of certain regulations for own funds and regulatory reporting at an institution level are satisfied (waiver rules). In its function as a parent company of LBBW Group, LBBW is exempt from the reporting requirements on solvency, leverage ratio and large exposures at institution level for the duration of the waiver. Only IFRS group reporting shall be prepared for this report.

There is no materially legal or factual impediment within LBBW Group to the immediate transfer of own funds or repayment of liabilities between LBBW as parent company and its subsidiaries

As at 31 December 2017, no non-consolidated subsidiary had less than the prescribed own funds.

3.2 Differences between the basis of consolidation in regulatory and regulatory terms.

Differences in the IFRS basis of consolidation particularly arise with regard to the following aspects:

- Companies outside the financial sector are also consolidated in the IFRS consolidated financial statements if it is possible to exercise control in accordance with IFRS. However, these companies are outside the regulatory basis of consolidation.
- Conversely, companies which do not meet the consolidation criteria in accordance with IFRS or are not consolidated due to their minor significance are also included in the basis of consolidation in accordance with the German Banking Act.

In the following table, the main companies included in the regulatory basis of consolidation in accordance with Article 436 CRR are classified according to the type of business and its regulatory treatment and are shown alongside their classification in the basis of consolidation under IFRS. Equity investments in entities in the financial sector not consolidated under the regulatory framework are taken into account in the threshold method. No deduction from own funds was necessary in the year under review. Both bases of consolidation include numerous further companies which, however, are not disclosed here due to their immateriality. The companies are classified on the basis of the definitions set out in Article 4 CRR.

Name of the entity	Accounting consolidation method for accounting purposes	Consolidation method for regulatory purposes				Description of the entity
		Full consolida-tion	Proportional consolida-tion	Neither consolidated nor deducted	Deducted	
Landesbank Baden-Württemberg	Full consolidation	X				Credit institution
MKB Mittelrheinische Bank GmbH	Full consolidation	X				Credit institution
Hypo Vorarlberger Bank AG	Accounted for using the equity method			X		Credit institution
LBBW Asset Management Investmentgesellschaft mbH	Full consolidation	X				Asset management company
LBBW México	Full consolidation	X				Credit institution
LBBW Venture Capital GmbH	Full consolidation	X				Credit institution
Süd Beteiligungen GmbH	Full consolidation	X				Credit institution
SüdFactoring GmbH	Full consolidation	X				Credit institution
SüdLeasing GmbH	Full consolidation	X				Credit institution
Austria Beteiligungsgesellschaft mbH	Full consolidation	X				Credit institution
Radon Verwaltungs-GmbH	Full consolidation	X				Credit institution
German Centre for Industry and Trade GmbH Beteiligungsgesellschaft	Full consolidation	X				Credit institution
LBBW US Real Estate Investment LLC	Full consolidation	X				Credit institution
Zweite LBBW US RE GmbH	Full consolidation	X				Credit institution
Dritte LBBW US RE GmbH	Full consolidation	X				Credit institution
LBBW Leasing GmbH	Full consolidation	X				Credit institution
LBBW Immobilien-Holding GmbH	Full consolidation	X				Credit institution
BW-Immobilien GmbH	Fully consolidation	X				Ancillary services undertaking
LBBW Service GmbH	Fully consolidation	X				Ancillary services undertaking

Figure 6: EU LI3 – Description of the differences in the basis of consolidation entity by entity (Article 436b CRR).

Reconciliation statement of items within the accounting and regulatory basis of consolidation.

The new disclosure requirements call for a full reconciliation of the published annual financial statements with data in accordance FINREP and moreover with data in accordance with COREP.

For FINREP, accounting figures will be used in accordance with the regulatory basis of consolidation; for COREP, the figures in question will be calculated in accordance with regulatory rules. The COREP figures are reported in accordance with the respective types of risk. This can mean that transactions are reported more than once, if they have to be reported under various risk types.

EUR million	carrying values, as reported in the published annual financial state-ments	Carrying values under the scope of regulatory consoli-dation	Carrying values of items:				
			Subject to the credit risk frame-work	Subject to the CCR frame-work	Subject to the securitiz ation frame-work	Subject to the market risk frame-work	Not subject to capital require-ments or subject to deduction from own funds
Assets							
Cash and cash equivalents	22 729	22 728	22 728	-	-	5 161	-
Loans and advances to banks	48 184	48 124	45 655	-	-	12 194	67
Loans and advances to customers	108 332	105 680	105 976	-	412	20 967	32
Allowances for losses on loans and advances	- 684	- 663	- 663	-	-		-
Financial assets measured at fair value through profit or loss	31 386	31 686	1 097	19 703	1	87 786	3 009
Financial investments	22 848	23 664	23 296	-	399	2 288	-
Shares in investments accounted for using the equity method	245	-	-	-	-	-	-
Portfolio hedge adjustment attributable to assets	606	606	-	-	-		606
Non-current assets and disposal groups held for sale	104	0	0	-	-		-
Intangible assets	244	244	-	-	-	0	244
Investment property	554	59	59	-	-		-
Property and equipment	482	451	451	-	-	0	-
Current income tax assets	92	90	90	-	-	2	-
Deferred income tax assets	1 016	1 048	716	-	-	-	332
Other assets	1 575	1 233	579	-	-	170	588
Total assets	**237 713**	**234 949**	**199 985**	**19 703**	**811**	**128 569**	**4 878**

Equity and liabilities							
Deposits from banks	61 895	61 589	-	-	-	14 925	47 683
Deposits from customers	79 415	79 503	-	-	-	9 923	78 869
Securitized liabilities	44 432	41 992	-	-	-	10 998	30 994
Financial liabilities measured at fair value through profit or loss	27 922	27 926	-	17 125	-	81 423	8 074
Portfolio hedge adjustment attributable to liabilities	239	239	-	-	-	-	239
Provisions	3 796	3 724	-	-	-	-	3 724
Liabilities from disposal groups	-	-	-	-	-	-	-
Current income tax liabilities	47	40	-	-	-	-	40
Deferred income tax liabilities	28	9	-	-	-	-	9
Other liabilities	1 199	1 136	-	-	-	1	1 135
Subordinated capital	5 364	5 364	-	-	-	850	4 514
Equity	13 377	13 428	-	-	-	-	13 428
Total equity and liabilities	**237 713**	**234 949**	**-**	**17 125**	**-**	**118 119**	**188 709**

Figure 7: EU LI1- Differences between accounting and regulatory basis of consolidation and mapping of financial statement categories with regulatory risk categories (Art. 436 (b) CRR)

Explanation of the differences arising from the reconciliation statement.

EUR million	Total	Items subject to: Credit risk framework	CCR framework	Securitization framework
Asset carrying amount under the basis of regulatory consolidation (as per template EU LI1)	**220 500**	**199 985**	**19 703**	**811**
Equity and liabilities carrying amount under the regulatory basis of consolidation (as per template EU LI1)	**17 125**	**-**	**17 125**	**-**
Total net amount under the regulatory basis of consolidation	220 500	199 985	19 703	811
Off-balance-sheet amounts	51 480	51 480	-	-
CCR - differences due to different netting rules	- 9 230	-	- 9 230	-
CCR - differences in the measurement of the derivatives	9 906	-	9 906	-
CCR - other differences in measurement	208	-	208	-
CR - differences in the measurement of securities financing transactions	16 542	16 542	-	-
CR - differences due to different valuation approaches	5 013	5 013	-	-
CR - other differences in measurement	- 39	- 39	-	-
SEC - off-balance-sheet positions and derivatives	3 003	-	-	3 003
SEC - other differences in measurement	1	-	-	1
Exposure amounts considered for regulatory purposes	**297 384**	**272 981**	**20 587**	**3 815**

Figures 8: EU LI2 - Main sources of differences between regulatory exposure amounts and carrying amounts in the annual financial statements (Art. 436 (b) CRR)

Exposure amounts considered for regulatory purposes

- in the credit framework consist of on-balance-sheet and off-balance-sheet items, the securities financing activities of the CRSA and IRB, investments reported under IRB and other non-credit obligation assets
- in the CCR framework consist of the combined derivative positions in the CRSA and IRB approach
- in the securitization risk framework consist of securitization positions under the CRSA und IRB.

The total of the carrying amounts under the regulatory scope of consolidation, reported in template EU LI2 cannot be reconciled directly with the figures shown in Template EU LI1, since market-risk framework positions are not included in EU LI2.

Apart from the effects shown above, LBBW also takes into account permissible prudential filters in accordance with Article 32 et seqq. CRR, which flow into the reconciliation items shown.

In order to comply with the requirements for a prudent valuation in accordance with Article 105 and Article 34 CRR, LBBW regularly calculates various valuation reserves that adhere to the principle of prudent valuation. All positions measured at fair value are taken into account and the total valuation adjustments are deducted from common equity Tier 1 capital. These include adjustments for market price uncertainty, netting costs, model risks, as yet unearned risk premiums, concentration positions as well as administrative expenses and operational risks.
Neither the prudential filters nor the prudent valuation have any effect on the on-balance-sheet carrying amounts (IFRS) or on the prudential risk exposures.

In order to quantify market price uncertainty and netting costs, LBBW uses an accuracy aim of 90 %. LBBW uses a price approach for securities. To this end, the bid and offer prices of various price-makers are analyzed on a quarterly basis and a price level is determined at which there is a 90 % probability that the positions in question can be liquidated. LBBW uses a sensitive approach for derivatives. To this end, market price uncertainty and netting costs are calculated by the multiplication of net sensitivity for each risk factor (interest rate delta, interest rate vega, FX delta, FX vega, equity delta, equity vega and credit delta) against a risk factor and the uncertainty inherent to the risk factor in question.

A valuation adjustment is made for model risks if there are no reliably observed market price parameters. This adjustment is measured based on suitable alternative models or calibrations. The basic assumption in this case is strictly that there is a 90 % probability that the valuation adjustments made will be sufficient to cover potential losses in the event of a liquidation of the transactions.

»As yet unearned risk premiums« are an estimate of uncertainty in relation to the counterparty credit risk (CVA) in the case of derivatives.

A concentrated position is defined as an exposure which cannot demonstrably be liquidated within the space of 10 days. The 10-day holding period is defined in Article 365 CRR on value-at-risk calculation. In order to determine a concentration, LBBW's own position is set against the volumes traded in the market. A valuation adjustment is made for the remaining exposure for positions which cannot be liquidated completely within the 10-day period. The adjustment is calculated for bond, interest-rate, credit and equity positions. An adjustment is made for future administrative costs for positions for which either market price uncertainty or netting costs cannot be calculated, or which are highly illiquid, require continuous additional hedging or which are complex. Administrative costs factor in continued costs over the period until the positions in question can be liquidated.

A valuation adjustment of 10 % of the sum of market price uncertainty and netting costs is applied for operational risks in line with the definition in Title III Chapter 4 CRR.

4 Owns funds and capital requirements (Articles 437 and 438 CRR).

4.1 Structure of own funds and applicable transitional provisions.

The following table sets out the LBBW Group's own funds pursuant to IFRS as well as the applicable deductions and transitional provisions in accordance with Commission Implementing Regulation (EU) No. 1423/2013 of 20 December 2013.

The »Reference« column in Figure 9 reconciles the components of the Bank's own funds under CRR with the balance sheet. Figure 11 shows the relevant items of the balance sheet with figures according to IFRS and FINREP (Financial Reporting).

EUR million Capital instruments	Amount on the day of disclosure 31 Dec. 2017	Reference to Articles in Regulation (EU) No. 575/2013	Amounts which come within the scope of Regulation (EU) No. 575/2013 or prescribed residual amount in accordance with Regulation (EU) No. 575/2013	Amount on 31 Dec. 2016	Reference
Common equity Tier 1 capital: instruments and reserves					
Capital instruments and related premiums	11 724	26 (1), 27, 28, 29, EBA directory in accordance with Article 26 (3)		11 724	j + k
of which share capital	3 484			3 484	
Retained earnings	568	26 (1) (c)		751	l
Cumulative comprehensive income (and other reserves comprising unrealized gains and losses under the applicable accounting standards)	721	26 (1)		731	m + n + o
Fund for general banking risks	-	26 (1) (f)	-	-	
Items as defined in Article 484 (3) plus the related premium no longer eligible for inclusion in CET 1	-	486 (2)		-	
Government capital allocations subject to grandfathering rights until 1 January 2018	-	483 (2)		-	
Non-controlling interests (admissible amount in consolidated CET 1)	-	84, 479, 480		-	
Independently audited interim gains less all foreseeable charges or dividends	-	26 (2)		-	
Common equity Tier 1 (CET 1) capital before regulatory adjustments	**13 013**			**13 207**	
Common equity Tier 1 (CET 1) capital: regulatory adjustments					
Additional measurement adjustments (negative amount)	- 212	34, 105		- 184	
Intangible assets (less corresponding tax liabilities) (negative amount)	- 252	36 (1) (b), 37, 472 (4)	- 63	- 377	a + b
Deferred tax assets whose recoverability depends on future profitability, except those arising from temporary differences (less corresponding tax liabilities if the conditions contained in Article 38 (3) are satisfied) (negative amount)	- 180	36 (1) (c), 38, 472 (5)	- 120	- 129	c
Reserves from gains or losses from the fair-value measurement of cash flow hedges	-	33 (a)		-	
Negative amounts from the calculation of expected losses	- 141	36 (1) (d), 40, 150	- 35	- 103	
Increase in equity capital arising from securitized assets (negative amount)	-	32 (1)		-	
Gains or losses arising from changes in the Bank's own credit rating from own liabilities measured at fair value	- 14	33 (b)		- 12	
Gains and losses from derivative liabilities measured at fair value arising from the Bank's own credit risk	- 60	33 (c)	- 15	- 76	
Defined-benefit pension fund assets (negative amount)	-	36 (1) (e), 41, 472 (7)		-	

EUR million Capital instruments	Amount on the day of disclosure 31 Dec. 2017	Reference to Articles in Regulation (EU) No. 575/2013	Amounts which come within the scope of Regulation (EU) No. 575/2013 or prescribed residual amount in accordance with Regulation (EU) No. 575/2013	Amount on 31 Dec. 2016	Reference
Direct and indirect holdings by an institution of its own common equity Tier 1 instruments (negative amount)	-	36 (1) (f), 42, 472 (8)		-	
Holdings of common equity Tier 1 instruments of financial sector entities where those entities have a reciprocal cross-holding with the institution designed to artificially inflate the institution's own funds (negative amount)	-	36 (1) (g), 44, 472 (9)		-	
Direct and indirect holdings by the institution of common equity Tier 1 instruments of financial sector entities where the institution does not have a significant investment in those entities (less than 10 % and less eligible sales positions) (negative amount)	-	36 (1) (h), 43, 45, 46, 49 (2) (3), 79, 472 (11)		-	
Direct, indirect and synthetic holdings by the institution of common equity Tier 1 instruments of financial sector entities where the institution has a significant investment in those entities (more than 10 % and less eligible sales positions) (negative amount)	-	36 (1) (i), 43, 45, 47, 48 (1) (b), 49 (1) to (3), 79, 470, 472 (11)		-	
Exposure amount of the following items which qualify for a risk weight of 1250 %, where the institution deducts that exposure amount from the amount of common equity Tier 1 items as an alternative	-	36 (1) (k)		-	
Deferred tax assets that rely on future profitability arising from temporary differences (in excess of the 10 % threshold, less corresponding tax liabilities if the conditions set forth in Article 38 (3) are satisfied) (negative amount)	-	36 (1) (c), 38, 48 (1) (a), 470, 472 (5)		-	
Amount in excess of the 17.65 % threshold (negative amount)	-	48 (1)		-	
of which direct and indirect holdings by the institution of common equity Tier 1 instruments of financial sector entities where the institution has a significant investment in those entities	-	36 (1) (i), 48 (1) (b), 470, 472 (11)		-	
of which deferred tax assets that rely on future profitability arising from temporary differences	-	36 (1) (c), 38, 48 (1) (a), 470, 472 (11)		-	
Losses for the current financial year (negative amount)	-	36 (1) (a), 472 (3)		-	
Any foreseeable tax charge relating to common equity Tier 1 capital (negative amount)	-	36 (1) (l)		-	
Regulatory adjustments to common equity Tier 1 capital with respect to amounts subject to pre-CRR treatment	-			-	
Prudential adjustments in connection with unrealized gains and losses in accordance with Article 467 and 468	- 144			- 292	
of which deductions and filters for unrealized losses from debt instruments	8			31	Sub-amount n
of which deductions and filters for unrealized losses from risk exposures to governments classified as »available for sale«	-			-	
of which deductions and filters for unrealized gains from equity investments	- 150			- 318	m
of which deductions and filters for reserves for currency translation differences	- 1			- 6	o
Amount to be deducted from or added to Common Equity Tier 1 in connection with additional deductions and filters and in accordance with the necessary pre-CRR deductions	- 56	481		-	
of which: irrevocable payment obligations for the bank levy and deposit insurance to DSGV	- 56			-	
Amount of items required to be deducted from additional Tier 1 items that exceeds the additional Tier 1 capital of the institution (negative amount)	-	36 (1) (j)		-	
Regulatory adjustments to common equity Tier 1 (CET 1) capital as a whole	**- 1 058**			**- 1 173**	
Common equity Tier 1 (CET 1) capital	**11 955**			**12 033**	

EUR million Capital instruments	Amount on the day of disclosure 31 Dec. 2017	Reference to Articles in Regulation (EU) No. 575/2013	Amounts which come within the scope of Regulation (EU) No. 575/2013 or prescribed residual amount in accordance with Regulation (EU) No. 575/2013	Amount on 31 Dec. 2016	Reference
Additional Tier 1 (AT1): instruments					
Capital instruments and related premiums	-	51, 52		-	
Amount of items as defined in Article 484 (4) plus the related premium no longer eligible for inclusion in AT1	920	486 (3)		1 074	h
Government capital allocations subject to grandfathering rights until 1 January 2018	-	483 (3)		-	
Qualifying CET 1 instruments counting towards consolidated AT1 (including the non-controlling interests not already mentioned above) which have been issued by subsidiaries and are held by third parties	-	85, 86, 480		-	
Additional Tier 1 (AT1) capital before regulatory adjustments	**920**			**1 074**	
Additional Tier 1 (AT1) capital: regulatory adjustments					
Direct and indirect holdings by an institution of its own additional Tier 1 instruments (negative amount)	-	52 (1) (b), 56 (a), 57, 475 (2)		-	
Holdings of additional Tier 1 instruments of financial sector entities where those entities have a reciprocal cross holding with the institution designed to artificially inflate the institution's own funds (negative amount).	-	56 (b), 58, 475 (3)		-	
Direct and indirect holdings by the institution of additional Tier 1 instruments of financial sector entities where the institution does not have a significant investment in those entities (less than 10 % and less eligible sales positions) (negative amount)	-	56 (c), 59, 60, 79, 475 (4)		-	
Direct and indirect holdings by the institution of additional Tier 1 instruments of financial sector entities where the institution has a significant investment in those entities (more than 10 % and less eligible sales positions) (negative amount)	-	56 (d), 59, 79, 475 (4)		-	
Regulatory adjustments to additional Tier 1 with respect to amounts subject to pre-CRR treatment and treatment during the transitional period for which transitional provisions apply under Regulation (EU) No. 575/2013 (i.e. CRR residual amounts)	-			-	
Residual amounts to be deducted from additional Tier 1 with respect to items to be deducted from common equity Tier 1 capital during the transitional period provided for in Article 472 of Regulation (EU) No. 575/2013	- 81	472, 472 (3) (a), 472 (a), 472 (6), 472 (8) (a), 472 (9), 472 (10) (a), 472 (11) (a)		- 286	
of which material interim losses (net)	-			-	
of which intangible assets	- 63			- 251	Partial amount (a + b)
of which shortfall of provisions for expected losses	- 18			- 34	
Residual amounts to be deducted from additional Tier 1 capital with respect to items to be deducted from CET 1 capital during the transitional period provided for in Article 475 of Regulation (EU) No. 575/2013	-	477, 477 (3), 477 (4) (a)		-	
Amount to be deducted from or added to additional Tier 1 in connection with additional deductions and filters and in accordance with the necessary pre-CRR deductions	-	467, 468, 481		-	
Amount of items required to be deducted from Tier 2 items that exceeds the Tier 2 capital of the institution (negative amount)	-	56		-	
Regulatory adjustments to additional Tier 1 (AT1) as a whole	**- 81**			**- 286**	
Additional Tier 1 (AT1)	**840**			**789**	
Tier 1 (T1 = CET 1 + AT1)	**12 795**			**12 822**	

Capital instruments (EUR million)	Amount on the day of disclosure 31 Dec. 2017	Reference to Articles in Regulation (EU) No. 575/2013	Amounts which come within the scope of Regulation (EU) No. 575/2013 or prescribed residual amount in accordance with Regulation (EU) No. 575/2013	Amount on 31 Dec. 2016	Reference
Tier 2 (T2): Instruments and reserves					
Capital instruments and related premiums	**4 117**	**62, 63**		**4 051**	**e + f + g + i**
Amount of items as defined in Article 484 (5) plus the related premium no longer eligible for inclusion in T2	-	486 (4)		-	
Government capital allocations subject to grandfathering rights until 1 January 2018	-	483 (4)		0	
Qualifying own funds instruments counting towards consolidated Tier 2 capital (including the non-controlling interests and AT1 instruments not already mentioned above) which have been issued by subsidiaries and are held by third parties	-	87, 88, 480		0	
Credit risk adjustments	-	62 (c) and (d)		0	
Tier 2 (T2) before regulatory adjustments	**4 117**			**4 051**	
Tier 2 (T2): regulatory adjustments					
Direct and indirect holdings by an institution of its own Tier 2 instruments and subordinated loans (negative amount)	- 25	63 (b) (i), 66 (a), 67, 477 (2)	- 10	- 25	
Holdings of Tier 2 instruments and subordinated loans of financial sector entities where those entities have a reciprocal cross holding with the institution designed to inflate artificially the institution's own funds (negative amount)	-	66 (b), 68, 477 (3)		-	
Direct and indirect holdings by the institution of Tier 2 instruments and subordinated loans of financial sector entities where the institution does not have a significant investment in those entities (less than 10 % and less eligible sales positions) (negative amount)	-	66 (c), 69, 70, 79, 477 (4)		-	
Direct and indirect holdings by the institution of Tier 2 instruments and subordinated loans of financial sector entities where the institution has a significant investment in those entities (less eligible sales positions) (negative amount)	-			-	
Regulatory adjustments to Tier 2 with respect to amounts subject to pre-CRR treatment and treatment during the transitional period subject to phase out arrangements as described in Regulation (EU) No. 575/2013 (i.e. CRR residual amounts)	-			-	
Residual amounts to be deducted from Tier 2 with respect to items to be deducted from CET 1 items during the transitional period provided for in Article 472 of Regulation (EU) No. 575/2013	- 18			- 34	
of which material interim losses (net)	-			-	
of which intangible assets	-			-	
of which shortfall of provisions for expected losses	- 18			- 34	
Residual amounts to be deducted from Tier 2 capital with respect to items to be deducted from CET 1 items during the transitional period provided for in Article 475 of Regulation (EU) No. 575/2013	-			-	
Amount to be deducted from or added to Tier 2 capital in connection with additional deductions and filters and in accordance with the necessary pre-CRR deductions	-			-	
Regulatory adjustments to Tier 2 (T2) capital as a whole	**- 43**			**- 59**	
Tier 2 (T2) capital as a whole	**4 075**			**3 992**	
Total capital (TC = T1 + T2)	**16 869**			**16 814**	
Risk weighted assets with respect to amounts subject to pre-CRR treatment and treatment during the transitional period which are subject to phase out arrangements as described in Regulation (EU) No. 575/2013 (i.e. CRR residual amounts)	-			-	
of which items not deducted from Tier 2 capital	-			-	
of which indirect holdings in the institution's own Tier 2 instruments	-			-	
Total risk weighted assets	**75 728**			**77 406**	

EUR million Capital instruments	Amount on the day of disclosure 31 Dec. 2017	Reference to Articles in Regulation (EU) No. 575/2013	Amounts which come within the scope of Regulation (EU) No. 575/2013 or prescribed residual amount in accordance with Regulation (EU) No. 575/2013	Amount on 31 Dec. 2016	Reference
Capital ratios and buffers					
CET 1 capital ratio (expressed as a percentage of the total risk exposure amount)	15.8	92 (2) (a), 465		15.5	
T1 capital ratio (expressed as a percentage of the total risk exposure amount)	16.9	92 (2) (b), 465		16.6	
Total capital ratio (expressed as a percentage of the total risk exposure amount)	22.3	92 (2) (c)		21.7	
Institution-specific capital buffer requirement (minimum required CET 1 capital ratio in accordance with Article 92 (1) (a) plus the required capital conservation buffer and countercyclical capital buffer, systemic risk buffer and buffer for systemically relevant institutions (G-SRI or A-SRI), expressed as a percentage of the total risk exposure amount)	6.1	CRD 128, 129, 130		5.1	
of which capital conservation buffer	1.3			0.6	
of which countercyclical capital buffer	0.0			0.0	
of which systemic risk buffer	0.0			0.0	
of which buffer for global systemically relevant institutions (G-SRIs) or other systemically relevant institutions (A-SRIs)	0.3			0.0	
CET 1 available for the buffers (expressed as a percentage of the total risk exposure amount)	11.3	CRD 128		11.1	
Amounts below the thresholds for deductions (before risk weighting)					
Direct and indirect holdings by the institution of instruments of financial sector entities where the institution does not have a significant investment in those entities (less than 10 % and less eligible sales positions)	654	36 (1) (h), 45, 46, 472 (10), 56 (c), 59, 60, 475 (4), 66 (c), 69, 70, 477 (4)		546	
Direct and indirect holdings by the institution of CET 1 instruments of financial sector entities where the institution has a significant investment in those entities (more than 10 % and less eligible sales positions)	768	36 (1) (i), 45, 48, 470, 472 (11)		746	
Deferred tax assets that rely on future profitability arising from temporary differences (under the 10 % threshold, less corresponding tax liabilities if the conditions set forth in Article 38 (3) are satisfied) (negative amount)	716	36 (1) (c), 38, 48, 470, 472 (c)		717	d
Applicable caps for the inclusion of impairments in Tier 2					
Credit risk adjustments eligible for inclusion in Tier 2 for risk exposure values to which the standard approach is applied (before application of the cap)	-	62		-	
Cap for the inclusion of credit risk adjustments in Tier 2 capital under the standard approach	170	62		159	
Credit risk adjustments eligible for inclusion in Tier 2 capital for risk exposure values to which the approach based on internal assessments is applied (before application of the cap)	-	62		-	
Cap on the inclusion of credit risk adjustments in Tier 2 capital under the approach based on internal assessments	297	62		294	
Equity instruments subject to phase-out arrangements (only applicable from 1 January 2014 until 1 January 2022)					
Current cap on CET 1 instruments subject to phase-out arrangements	-	484 (3), 486 (2) and (5)		-	
Amount excluded from CET 1 due to cap (amount in excess of the cap after repayments and maturities)	-	484 (3), 486 (2) and (5)		-	
Current cap on AT1 instruments subject to phase-out arrangements	1 205	484 (4), 486 (3) and (5)		1 446	
Amount excluded from AT1 due to cap (amount in excess of the cap after repayments and maturities)	-	484 (4), 486 (3) and (5)		-	
Current cap on T2 instruments subject to phase-out arrangements	-	484 (5), 486 (4) and (5)		-	
Amount excluded from T2 due to cap (amount in excess of the cap after repayments and maturities)	-	484 (5), 486 (4) and (5)		-	

Figure 9: Capital instruments and deductions pursuant to Implementing Regulation (EU) 1423/2013.

The LBBW Group's own funds are made up of

- common equity Tier 1 (CET 1) capital, which comprises the following items:
  - paid-in capital
  - share premiums (capital reserves)
  - retained earnings
  - other eligible reserves (including revaluation reserves)

- Additional Tier 1 (AT1) capital, which comprises the following items:
  - Silent partners' contributions

- and Tier 2 (T2) capital, which comprises the following items:
  - long-term subordinated liabilities (and related premiums)
  - participation rights (and related premiums)

Under the applicable transitional rules, additional Tier 1 capital is eligible for full inclusion.

Tier 2 capital must be amortized to the day in the five years prior to maturity under the applicable rules.

The disclosures required under Article 437 (1) (b) CRR on the main features of all capital instruments issued are set out in a separate document entitled »Main features of capital instruments«, which is also found under »Investor Relations – Financial Information and Reports – Disclosure Reports« on the LBBW website. The full terms and conditions of subordinated bearer instruments pursuant to Article 437 (1)(c) CRR are published in the »LBBW Markets Portal« under »Startseite Privatkunden – Themen – Rechtliches - Nachrangemissionen – Endgültige Bedingungen« (available in German only). The relevant terms and conditions for subordinated registered securities and silent partners' contributions can be viewed at LBBW's main offices in Stuttgart during normal office hours.

The common equity Tier 1 capital of the LBBW Group only decreased marginally compared to the previous year. This was as a result of various effects that canceled each other out. The main reasons for this were the CRR transitional rules that were adjusted for 2017. Due to these transitional rules, a higher deductible must be recognized at the expense of the CET 1. The new deduction item also has a reducing effect owing to the irrevocable payment obligations for the bank levy and deposit guarantee system payable to the German Savings Banks Association (DSGV) as well as the profit distributed to shareholders in 2017. The non-recurrence of the deductible item for goodwill in 2017 had a counteracting effect, thus increasing the CET 1. On the other hand, the higher burden on the CET 1 due to the changed transitional rules led to a lower deduction from AT 1 and the T2.

Eligible additional Tier I capital increased despite maturities of silent partners' contributions owing to CRR transitional rules. Supplementary capital was strengthened in the first half of 2017 through the issue of two subordinated bonds of SGD 300 million and AUD 300 million, respectively, within the scope of the MTN program. The deductible item on account of transitional rules and the amortization to the day of Tier 2 capital components had the opposite effect.

The changes impacting on CET 1 capital have an effect on all capital ratios. The issue of Tier 2 capital only had a positive effect on the total capital ratio.

Due to the aforementioned facts and the reduction in risk weighted assets, LBBW's CET 1 capital ratio, Tier 1 capital ratio and total capital ratio fell compared with the previous year. The calculation of capital ratios does not include any elements of own funds calculated on a basis other than that stipulated in the CRR (Article 437 (1) (f) CRR).

The following table sets out the treatment of the deductibles from CET 1, including the applicable transitional rules. Under the applicable transitional rules, a partial deduction from additional Tier 1 or Tier 2 capital is possible during the transitional period.

Deductions	Current 100 % inclusion	Transitional rules
Revaluation reserve		
Deductions for unrealized losses from debt instruments		in 2017: 80 % from 2018: 100 %
Deductions for unrealized gains from equity investments (including currency translation reserve)		in 2017: 80 % from 2018: 100 %
Prudential filters		
Reserves from gains or losses from the fair-value measurement of cash flow hedges	x	
Gains or losses arising from changes in the Bank's own credit rating from own liabilities measured at fair value	x	
Gains and losses from derivative liabilities measured at fair value arising from the Bank's own credit risk		in 2017: 80 % from 2018: 100 %
Additional measurement adjustments in accordance with the principles of cautious measurement	x	
Other deductions		
Current losses		in 2017: 80 % from 2018: 100 %
Intangible assets and goodwill		in 2017: 80 % from 2018: 100 %
Deferred tax assets that rely on future profitability except those arising from temporary differences		in 2017: 60% from 2019: 100%
Negative amounts from the calculation of expected losses		in 2017: 80 % from 2018: 100 %

Figure 10: Transitional rules for deductions (Article 437 (1) (e) CRR).

4.2 Reconciliation of own fund components.

The following table compares the components of the Bank's own funds relevant for the CRR report on the basis of the accounting and regulatory bases of consolidation. It only includes those items of the balance sheet which are relevant for the calculation of the Bank's own funds in accordance with CRR. Accordingly, it does not show all the components reported on the face of the balance sheet.

EUR million Assets as at 31 Dec. 2017	In accordance with the IFRS consolidated financial statements	In accordance with FINREP	Reference
Intangible assets	**244**	**244**	
of which goodwill	-	-	a
of which other intangible assets	244	244	b
Deferred income tax assets	**1 016**	**1 048**	
of which from unused tax losses	300	288	c
of which from temporary differences	716	760	d

EUR million Equity and liabilities as at 31 Dec. 2017	In accordance with the IFRS consolidated financial statements	In accordance with FINREP	Reference
Financial liabilities measured at fair value through profit or loss	**27 922**	**27 926**	
of which subordinated liabilities	462	462	e
of which capital generated from profit-participation rights	127	127	f
Subordinated capital	**5 364**	**5 364**	
of which subordinated liabilities	4 158	4 158	g
of which typical silent partners' contributions	1 104	1 104	h
of which capital generated from profit-participation rights	102	102	i
Equity	**13 377**	**13 428**	
of which share capital	3 484	3 484	j
of which capital reserve	8 240	8 240	k
of which retained earnings	820	563	l
of which other income	371	731	
of which revaluation reserve	337	714	
of which revaluation reserve for equity investments	376	752	m
of which revaluation reserve for debt instruments	- 39	- 38	n
of which currency translation reserve	23	7	o

Figure 11: Reconciliation of the Bank's own funds (Article 437 (1) (a) CRR).

The ongoing strategic realigning of liquidity management led to shifts between individual balance sheet items. In this context, there was an increase in the volume of loans and advances to customers and banks and deposits from customers and banks. This affected mainly overnight and term money. On the other hand, the volume of financial assets or liabilities measured at fair value through profit or loss declined.

4.3 Internal capital management.

For a description of internal capital management, please refer to chapter 2.2, »Risk management systems«.

4.4 Countercyclical capital buffer.

The institution-specific countercyclical capital buffer shall be published in the disclosure report pursuant to Commission Delegated Regulation (EU) No. 2015/1555.

The countercyclical capital buffer may be imposed by a duly authorized authority of member states of the European Economic Area (EEA) and by non-member countries. The buffer is generally 0 % to 2.5 % of the own funds requirements resulting from this country. When calculating the countercyclical capital buffer, the own funds requirements allocated to the exposure classes central governments, regional governments and local authorities, other public-sector agencies, multilateral development banks, international organizations and banks, are excluded. With this buffer, the risk exposures located in this country and not covered by the exemption must also be backed by CET 1 capital.

Under the applicable transitional rules pursuant to Section 64r of the German Banking Act, the CET 1 capital cover of the total countercyclical capital buffer of all relevant countries is capped at 1.25 % in 2017.

The countries with the greatest risk exposure and those that imposed a countercyclical capital buffer in 2017 are shown in the following table.
The following countries had declared a countercyclical capital buffer for 2017:

- Norway – 2.00 %
- Sweden 2.00 %
- Hong Kong 1.25 %
- Slovakia 0.50 %
- Iceland 1.25 %
- Czech Republic 0.50 %.

EUR million	General credit risk exposures		Risk exposures in the trading book		Securitization risk exposures		Own funds requirements					
Breakdown by country	Risk exposure value CRSA	Risk exposure value IRB	Total of purchase and sales positions in the trading book	Values of risk exposures in the trading book (internal models)	Risk exposure value CRSA	Risk exposure value IRB	Of which: general credit risk exposures	Of which: risk exposures in the trading book	Of which: securitization positions	Total	Weighting of the own fund requirements per country	Counter-cyclical capital buffer ratio
Germany	16 427	64 907	3 357	-	15	2 827	38	-	43	3 332	0.74570	-
Austria	40	1 381	40	-	-		1	-	-	49	0.01107	-
Switzerland	79	2 155	69	-	-	29	3	-	1	73	0.01641	-
United Kingdom	12	921	1 549	-	-	30	10	-	29	78	0.01753	-
Luxembourg	61	1 980	385	-	-		15	-	-	90	0.02008	-
Netherlands	50	1 485	331	-	-		7	-	-	64	0.01440	-
USA	81	8 953	190	-	-	515	3	-	9	232	0.05191	-
Czech Rep.	4	49	-	-	-	-	-	-	-	2	0.00050	0.00000
Hong Kong	0	47	-	-	-	-	-	-	-	1	0.00021	0.00000
Iceland	0	2	1	-	-	-	0	-	-	0	0.00003	0.00000
Norway	1	1 397	628	-	-	-	5	-	-	15	0.00331	0.00000
Sweden	1	34	237	-	-	155	2	-	1	4	0.00093	0.00007
Slovakia	1	0		-	-			-	-	0	0.00002	0.00002
Other	581	8 575	3 566	-	-	244	155	-	5	527	0.11788	0.00000
Total	**17 337**	**91 886**	**10 354**	**-**	**15**	**3 800**	**238**	**-**	**87**	**4 468**	**1.00000**	**0.00009**

Figure 12: Determining the institution-specific countercyclical capital buffer (pursuant to Article 140 CRD).

The amount of LBBW's institution-specific countercyclical capital buffer is shown in the following figure.

Institution-specific countercyclical capital buffer	
Total risk exposure in EUR million	75 728
Institution-specific ratio of countercyclical capital buffer in percent	0.009
Requirements of the institution-specific countercyclical capital buffer in EUR million	7

Figure 13: Institution-specific countercyclical capital buffer (Article 140 CRD).

4.5 Own funds requirements.

Since the implementation of the new disclosure requirements pursuant to BCBS 309 as per 31 December 2017, own fund requirements for credit risks without CCR must be reported in accordance with the credit risk standardized approach (CRSA) or with the internal ratings-based approach (IRB) and split by counterparty default risk.

LBBW uses the internal ratings-based approach (foundation IRB approach) approved by the Federal Financial Supervisory Authority (BaFin) for calculating the own funds requirements for counterparty risks arising from the main exposure classes.

The own funds requirements for investments which were acquired before 1 January 2008 are exempt from the application of the IRB approach in accordance with Article 495 CRR (grandfathering rule) until 31 December 2017 and may continue to be reported under the CRSA with a risk weight of 100 %. Investments acquired after that date are backed according to the internal rating, if available. Otherwise, the simple risk weight approach is applied with a corresponding fixed risk weight. Significant investments in financial sector entities must be risk-weighted at a fixed 250 %, irrespective of the approach.

A distinction is also drawn between CRSA and IRBA securitization in the case of own funds requirements for securities transactions. In this case, where items are reported using the IRB approach, there is a further sub-division between the supervisory formula approach (SFA) and internal assessment approach (IAA).

The own funds requirements for market price risks for the general interest rate risk, general share price risk and associated option price risks of LBBW (Bank) are calculated based on an internal market price risk model also approved by the regulatory authority. Since 31 December 2011, this has also included the own funds requirements for stressed VaR. The other market price risks are calculated using the standard approach.

Own funds requirements for operational risks are calculated using the standard approach.

Significant investments in financial sector entities to which a 250 % risk weight must be applied along with deferred taxes resulting from temporary differences are reported in the line »Amounts below the thresholds for deductions«.

The following table sets out the risk weighted assets and own funds requirements for risk types that are relevant from a prudential point of view.

A breakdown by exposure class is provided as follows:

Credit risks in CRSA, Section 6.4, Figure 37: EU CR4 – Standard approach – credit risk and impact of credit risk mitigation
(Article 444 (e) CRR).

credit risks in IRB, Section 6.5, Figure 38: EU CR6 – IRB approach – Credit risk exposures by exposure class and PD range
(Article 452 (e) to (g) CRR).

counterparty credit risk, Section 7, figure 46: EU CCR4 – IRB approach - counterparty default risk items split by portfolio and PD scale
(Article 452(e) CRR together with Article 92(3) (a) and (3) (f) CRR)

EUR million	RWAs		Minimum capital requirements
	31 Dec. 2017	31 Dec. 2016	31 Dec. 2017
Credit risk (excl. CCR)	**56 253**	**54 521**	**4 500**
of which under the standardised approach	12 414	11 719	993
of which in the foundation IRB approach (FIRB)	42 326	41 031	3 386
of which advanced IRB approach (AIRB)	-	-	-
of which investments in the IRB approach using the simple risk weight approach or the IMA	1 513	1 772	121
Counterparty credit risk (CCR)	**4 540**	**4 973**	**363**
of which under the mark-to-market	2 477	2 870	198
of which under original exposure	-	-	-
of which under the standardised approach	-	-	-
of which under the internal model method (IMM)	-	-	-
of which risk-weighted exposure amount for contributions to the default fund for a CCP	142	224	11
of which CVA	1 922	1 879	154
Settlement risk	**0**	**0**	**0**
Securitization positions in the banking book (after application of the cap)	**1 093**	**1 114**	**87**
of which under the IRB approach	427	508	34
of which under the IRB supervisory formula approach (SFA)	51	33	4
of which under the internal assessment approach (IAA)	612	563	49
of which under the standardised approach	3	11	0
Market risk	**5 608**	**8 425**	**449**
of which under the standardised approach	3 402	3 163	272
of which under IMA	2 206	5 262	176
Large exposures	-	-	-
Operational risk	**4 514**	**4 715**	**361**
of which under the basic indicator approach	-	-	-
of which under the standardised approach	4 514	4 715	361
of which under the advanced measurement approach	-	-	-
Amounts below the thresholds for deductions (subject to 250 % risk weight)	**3 720**	**3 657**	**298**
Adjustment of floor	-	-	-
Total	**75 728**	**77 406**	**6 058**

Figure 14: EU OV1 – Overview of risk weighted assets (RWA) (Article 438 (c) to (f) CRR).

A decline in the partial amount at risk from trading book risks pursuant to the Internal Model Method was a major contributory factor in the decline in the total amount at risk compared with the previous year. This essentially results from taking correlation effects into account when netting general interest rate, equity and equity volatility risks. The positive business development in credit risk had a counteracting effect.

The following table shows own fund requirements for specialized lending exposures reported using the IRB approach and for equity investments reported using the IRB approach that are subject to a fixed risk weight.

EUR million	Specialized lending exposures					
Residual term/ Regulatory categories	On-balance-sheet amount	Off-balance-sheet amount	Risk weight	Exposure amount	RWAs	Expected losses
Category 1						
Less than 2.5 years	51	0	50 %	51	26	-
Equal to or more than 2.5 years	-	1	70 %	0	0	0
Category 2						
Less than 2.5 years	12	0	70 %	12	9	0
Equal to or more than 2.5 years	55	-	90 %	55	50	0
Category 3						
Less than 2.5 years	9	-	115 %	9	10	0
Equal to or more than 2.5 years	53	-	115 %	53	61	1
Category 4						
Less than 2.5 years	-	-	250 %	-	-	-
Equal to or more than 2.5 years	-	-	250 %	-	-	-
Category 5						
Less than 2.5 years	-	-	-	-	-	-
Equal to or more than 2.5 years	-	-	-	-	-	-
Total	**180**	**1**		**182**	**156**	**2**
Less than 2.5 years	72	0		73	45	0
Equal to or more than 2.5 years	108	1		109	111	2
	Equity investments under the simple risk weight approach					
Categories	On-balance-sheet amount	Off-balance-sheet amount	Risk weight	Exposure amount	RWAs	Capital requirements
Private equity investments	772	-	190 %	772	1 467	117
Exchange traded equity investments	16	-	290 %	16	46	4
Other equity investments	-	-	370 %	-	-	-
Total	**788**	-		**788**	**1 513**	**121**

Figure 15: EU CR10 – IRB specialized lending exposures and equity investments with a fixed risk weight

LBBW does not have any equity investments in insurance companies, hence no disclosure requirement of template EU INS1.

5 Credit risk (Articles 442, 444, 452 CRR).

5.1 Counterparty risk management.

Management for limiting the counterparty risk is implemented as an integrated process at LBBW and can be broken down into the three main components of risk measurement, risk monitoring and reporting as well as risk management:

Risk measurement	▪ Risk classification procedures (PD) ▪ Evaluating collateral (LGD) ▪ Exposure at default (EaD) ▪ Expected Losses (EL), Value adjustment and Credit Value Adjustment (CVA) ▪ Credit Value-at-Risk (CVaR) ▪ Early-warning system and stress tests

Risk monitoring and reporting	▪ Individual transaction level
	  ▪ Active risk management by back office departments
	  ▪ Early warning indicators
	  ▪ Intensive care of delinquent loans
	  ▪ Supervision of loans for restructuring and winding up by dedicated units of the Risk Management division
	▪ Portfolio level
	  ▪ Counterparty credit limits, country and sector limits
	  ▪ Regular reports
	  ▪ Ad-hoc information on risk situation

Risk management	▪ Individual transaction level
	  ▪ Guidelines of the credit risk strategy
	  ▪ Pricing in line with risk and equity
	▪ Sub-portfolio level
	  ▪ Measures to observe various portfolio limits
	  ▪ Targets for credit risk strategy
	▪ Total portfolio level
	  ▪ Allocation of economic capital to the sectors

Figure 16: Main components of counterparty risk management.

Risk measurement.

In order to measure risk, LBBW uses an extensive range of instruments involving quantitative measuring procedures. These are subject to ongoing quality control and undergo permanent development.

Risk classification procedures.

LBBW uses specific rating and risk classification procedures for all relevant business activities. These procedures quantify the probability of default (PD) of the individual investments. For this purpose, the counterparty risk is calculated both including and excluding the transfer risk.

The quality of the risk classification procedures in use is reviewed regularly and procedures are refined if necessary. These procedures are maintained and updated by independently LBBW or in cooperation with Rating Service Unit GmbH & Co. KG (RSU - an associated company of the Landesbanken) or Sparkassen Rating und Risikosysteme GmbH (SR - a subsidiary of Deutscher Sparkassen- und Giroverband - DSGV).

Most of the portfolio is valued using internal rating procedures which have been approved for the Internal Ratings Based Approach (IRBA) by the banking supervisor. The ratings are therefore not only used for internal management purposes but also to measure the regulatory capital requirements.

Evaluating collateral.

Collateral is evaluated on the basis of its market value, which is reviewed regularly and on an ad hoc basis and adjusted in the event of any change in the relevant factors. Loss given default (LGD) is estimated on the basis of the valuation of the individual items of collateral. In this respect, differentiated estimates are calculated for liquidation rates (average proceeds expected from the liquidation of collateral) and for recovery rates (proportion of the proceeds from the unsecured portion of a receivable). The estimates are based on empirical values and pool data recorded by the Bank itself and in cooperation with savings banks and other Landesbanken.

Exposure at default.

Whereas exposure is tied to a specific date (exposure at default, EAD) for reporting purposes, potential future exposure is calculated to determine the CVaR and the utilization of internal limits, e.g. in the case of derivatives. This is calculated for the most part on the basis of fair values and the corresponding regulatory add-ons. The add-on calculation takes account of the remaining maturity, product type and market factors (interest, currency etc.). Netting and collateral agreements are used for reducing risk. The capital charges for issuer risks held in the trading book take account of the settlement payments and actual fair value losses as a result of default (jump-to-default method). The (modified) nominals are used for issuer and reference debtor risks from securities and holdings in the banking book.

Expected losses, value adjustments and credit value adjustment.

The expected loss (EL) – as an indicator that depends on customer creditworthiness, an estimation of the loss at default and the expected exposure at default – provides the basis for the level of the standard risk costs. In preliminary costing at the individual transaction level, these are included in the calculation of risk-adequate loan terms. The concept of the expected loss is also resorted to in

connection with the calculation of impairments. When calculating general allowances for losses on loans and advances, the incurred loss that has not yet been recognized because of delays in information is estimated on the basis of the EL. In the case of specific loan loss provisions (SLLP), the present values of the expected cash flows (including proceeds from the liquidation of collateral) are calculated and allowances for losses on loans and advances are made on the basis of uniform standards applied throughout the Group.

Please refer to the explanations under Note 2 (»Changes and estimates«, p. 147 et seqq.) in the annual report with regard to the activities involved in the transition to the new loss impairment model in accordance with IFRS 9, which is based on the concept of expected loss.

The market price of the counterparty risk of OTC derivatives accounted for at fair value is measured using the so-called credit value adjustment (CVA). This is included in LBBW's income statement as a valuation adjustment. The credit ratings of the counterparty and of LBBW are taken into consideration.

Credit value-at-risk.

At LBBW, unexpected loss or credit value-at-risk (CVaR) represents the potential present value loss of a portfolio above its expected loss. A credit portfolio model that takes the defaults as well as rating migration into account is used to calculate this value. The borrowers are assigned corresponding default and migration probabilities, on the basis of their ratings. The CVaR is calculated using a Monte Carlo simulation approach and takes into consideration correlations between borrowers as well as borrower, sector and country concentrations. LBBW's loan portfolio model is subjected continuously to a validation program that is independent of the model development.

CVaR is used as the parameter for economic capital used for counterparty risks in the risk-bearing capacity analysis and in LBBW's management. CVaR and economic capital are defined using an adequate confidence level and time horizon of one year.

Risk concentrations and stress tests.

Risk concentration is measured using the CVaR, among other things. Group Risk Control proposes concentration risk thresholds for individual borrowers as well as at sector level; these are set by the Board of Managing Directors. The thresholds are reviewed annually and adjusted if necessary, depending on the development of the loan portfolio and the risk-bearing capacity.

In addition, extensive stress scenarios – particularly in the light of possible concentration risks – are calculated at LBBW Group level to analyze possible changes in LBBW's portfolio or specific rating procedures arising from potential developments (e.g. sector crises) or the market environment. Counterparty risks are included in scenarios covering multiple risk types.

Risk monitoring and reporting.

Individual transaction level.

Risk management at the level of individual exposures is the responsibility of the back office divisions. These are organized separately from the front office divisions, in line with the regulatory

requirements. Clear responsibilities and appropriate experience and expertise are ensured in the back office divisions by a customer or sector-specific organizational structure. Credit decisions are made in a system of graded competencies, which are regulated in the Bank's decision-making systems.

As part of risk monitoring, the risk managers responsible continuously check compliance with the limits granted as well as any changes in information of relevance for credit ratings. This includes monitoring any irregularities in account behavior, evaluating company news and observing macroeconomic and sector trends. In cases in which market data can be observed for a given company, a market data-based system is additionally used according to requirements.

A system is in place for the early detection of risks, comprising procedural regulations and system-generated signals, whose goal it is to detect any deterioration in credit ratings at an early stage.

The early detection of any deterioration in credit ratings allows appropriate countermeasures, e.g. additional collateral or pre-emptive restructuring, to be taken in consultation with the customer. Depending on the level of risk, problem assets are classified as cases requiring observation, intensified support, restructuring or liquidation and are dealt with by the departments responsible. LBBW aims to minimize losses through successful restructuring activities, in line with the Bank’s own interests and those of its customers.

Portfolio level.

Counterparty risk is monitored at the portfolio level in the Group Risk Control division, which, from an organizational point of view, is separate from the front and operational back office divisions. This division is responsible for ensuring the suitability of rating procedures, measuring counterparty risk, monitoring counterparty credit, country and sector limits and drawing up risk reports.

The respective utilization of the exposure and CVaR limits set is shown in the monthly overall risk report, among other things. The following also applies:

- Compliance with country limits is monitored on a daily basis with a special limit system.
- The portfolio of financials has an overall limit.
- Sector risks arising from the corporates portfolio are restricted and monitored through the stipulation of sector-specific limits. The limit system is based on a risk-oriented sector key designed specifically for this purpose, which combines sector segments that have a high loss dependence along the value chain. For example, mechanical engineering companies whose products are sold predominantly to customers from the automotive industry are also assigned to the automotive industry.

An ad hoc reporting process is implemented for significant and extraordinary events for specific reporting to the decision-makers in charge. The most important periodic reports are as follows:

- The overall risk report presented monthly in the Risk Committee, which includes details about the risk situation at the portfolio level and compliance with the material limits. Portfolio analyses additionally report on the risk situation of individual sectors and risk concentrations, for example.
- The comprehensive credit risk report, submitted on a quarterly basis as an appendix to the overall risk report. This contains additional detailed information on the development of allowances for

losses on loans and advances, compliance with the parameters of the credit risk strategy, rating distributions, size classes, product types, remaining maturities, new business, and risk concentration arising from individual commitments.
- The half-yearly in-depth sector report with detailed information on the sector situation, portfolio structure and important customers in each sector.

Risk management.

Counterparty risks are managed, in particular, through the requirements of the credit risk strategy, through the economic capital allocation to sub-portfolios with the aid of the CVaR, and by avoiding and reducing concentration risks at the level of sectors, countries and individual counterparties.

Individual transaction level.

As a rule, the upper limits on the individual transaction level are set individually by the respective authorized person responsible for the front office or back office divisions. This upper limit is taken into account for all risk-relevant transactions by a customer or borrower unit or group of connected clients. A material part of managing individual transactions involves monitoring compliance with the quantitative and qualitative requirements defined in the credit risk strategy. This determines the underlying terms and conditions for LBBW's lending business on the basis of the business strategy and in the light of the Group risk strategy. Particular attention is paid to avoiding concentration risks.

From an economic point of view, the question of whether a transaction will produce an adequate profit on a risk-adjusted basis is a key consideration before entering into business; for this reason, preliminary costing of all individual transactions is compulsory. In addition to the historical interest rate and the bank levy, the components in the preliminary costing comprise cover for expected loss (risk range), interest on equity to be held in case of unexpected losses (capital range) and cover for liquidity and processing costs. The results form the basis of business management at customer level.

Sub-portfolio level.

The risk management measures differ depending on the respective sub-portfolio level:

- Country limits are determined by the Board of Managing Directors, based on the proposals of the Country Limit Committee. If the country limit is almost fully utilized, the affected front and back office divisions are notified and if the limit is exceeded a ban on business is imposed. If country credit ratings deteriorate, limits are reduced and/or suspended. Wind-down targets also exist for countries that are the focus of particular attention.
- The limitation on the portfolios of financial institutions and corporates sectors triggers controlling measures such as hedging transactions to reduce risk or a ban on new business etc. if certain thresholds are exceeded.
- At the business area or sub-business area level, risks are limited through measures to ensure adherence to the portfolio guidelines of the credit risk strategy with regard to upper limits, rating structures and the portfolio quality, among others.

Total portfolio level.

In the management of the Group's credit portfolio, the limit in particular for the economic capital for counterparty risks based on the CVaR is allocated to the sectors. A traffic light system recognizes at an early stage if limits are close to being fully utilized and corresponding measures are initiated. In addition, the results of the stress tests provide indications of potentially dangerous risk constellations, which may require measures to be taken.

5.2 Applying the standard approach to credit risks.

External cred it rating assessments from the following ratings agencies are applied to calculate regulatory capital requirements under the credit risk standard approach:

- Standard & Poor’s Ratings Services
- Moody’s Investors Service
- Fitch Ratings Ltd

These are applied on a standardized basis for all relevant CRSA exposure classes.

Where a credit assessment exists for the position of an exposure in CRSA, it is used to determine the risk weight to be assigned to the position (Article 139 (1) CRR). Where no such rating exists, the risk is weighted using the credit assessment for a comparable exposure or using a general credit assessment for the issuer (Article 139 (2) CRR).

Comparable exposures are exposures which must be met by the same obligor of the CRSA exposure and for which a credit assessment exists for a specific issuing program.

At LBBW, possible further (comparable) exposures to the same obligor with an issuer or issue credit assessment are calculated automatically using customer-related information. The reporting software uses predefined selection criteria to assign an external rating to the exposure.

In all other cases, the exposures are treated as unrated.

LBBW uses the allocation prescribed by the EBA pursuant to CRR when mapping the credit assessments of external credit assessment institutions with the credit quality steps under the Standardized Approach.

Quality steps	Standard & Poor's Ratings Services	Fitch Ratings Ltd.	Moody's Investors Service
1	AAA to AA-	AAA to AA-	Aaa to Aa3
2	A+ to A-	A+ to A-	A1 to A3
3	BBB+ to BBB-	BBB+ to BBB-	Baa1 to Baa3
4	BB+ to BB-	BB+ to BB-	Ba1 to Ba3
5	B+ to B-	B+ to B-	B1 to B3
6	CCC+ and lower	CCC+ and lower	Caa1 and lower

Figure 17: Long-term credit assessments pursuant to Commission Implementing Regulation (EU) 2016/1799 of 7 October 2016.

In the following table, CRSA exposure at default (EAD) is reported after credit risk mitigation and credit conversion factors. Exposures are broken down by risk category and risk weight. The table does not include 2 %, 4 %, 10 % or 370 % risk weights, since LBBW has no exposures in any of these risk weight categories. Exposures for which there is no credit assessment from a recognized external rating assessment institution and which therefore have no specific risk weight pursuant to Articles 113 to 134 CRR, are included in the column »of which without rating«.

EUR million	Risk weight													
Exposure classes	0 %	20 %	35 %	50 %	70 %	75 %	100 %	150 %	250 %	1250 %	Other	Less	Total	of which un-rated
Central governments or central banks	274	-	-	-	-	-	-	-	-	-	-	-	274	274
Regional governments or local authorities	1 304	2	-	-	-	-	-	-	-	-	-	-	1 306	1 304
Public-sector agencies	0	208	-	-	-	-	1	-	-	-	-	-	208	1
Multilateral development banks	0	-	-	-	-	-	-	-	-	-	-	-	0	0
International organizations	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Banks	26 121	4 215		11	-	-	-	-	-	0		0	30 347	30 251
Corporates	-	927	5	339	383	-	5 300	0	-	-	-	-	6 954	5 572
Retail business	-	-	-	-	-	5 163	-	-	-	-	-	-	5 163	5 163
Secured by real estate	-	-	5 028	130	-	-	-	-	-	-	-	-	5 158	5 158
Exposures in default	-	-	-	-	-	-	58	84	-	-	-	-	142	142
Items exposed to a particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Undertakings for collective investment	-	-	-	-	-	-	-	-	-	-	2	-	2	2
Equity investments	-	-	-	-	-	-	53	-	362	-	-	-	414	414
Other items	-	-	-	-	-	-	32	-	-	-	-	-	32	36
Total	27 700	5 352	5 033	479	383	5 163	5 443	84	362	0	2	0	**50 001**	**48 316**

Figure 18: EU CR5 – CRSA – Breakdown by risk category and risk weight (Article 444 (e) CRR)).

Exposures to be reported with a risk weight of »0« are down sharply on the previous year (EUR 35 791 million). This primarily reflects a repayment of Sealink Funding DAC loan which was secured with a maximum guarantee from the Land of Baden-Württemberg of EUR 4.2 billion.

5.3 Use of the IRB approach to credit risk (Article 452 CRR).

Since 1 January 2008, LBBW has been permitted by BaFin to apply the basic IRB approach to both the Bank and the entire LBBW Group. As of this date, regulatory capital backing is based on the following rating systems in line with the IRB approach:

- Banks
- Country and transfer risks
- Insurance companies
- Project finance
- Corporates
- International real estate finance
- Sparkassen-ImmobiliengeschäftsRating
- DSGV-Haftungsverbund
- Sparkassen-StandardRating
- Specific special rating classes
- IAA procedure for measuring securitization positions
- SFA procedure for measuring securitization positions
- Leasing
- Leveraged finance
- Aircraft finance
- International administrative authorities
- Funds.

The CRS approach is used for all other portfolios of LBBW (Bank) and all other companies included in the regulatory basis of consolidation of the LBBW Group with the exception of the equity investment portfolio. The IRB approach is applied to the investment portfolios of all subsidiaries.

With the existing cover, the materially significant portfolios are treated under the IRB approach.

Description of the internal rating procedures.

As a general rule, LBBW's internal rating procedures can be divided into two categories:

- Scorecard-based rating procedures

A scorecard procedure is a standardized measurement method. These procedures involve the measurement of quantitative and qualitative factors in the light of liability relationships. Finally, transferals and warning signals are included in the rating result.

- Simulation-based rating procedures

In contrast to a scorecard-based rating procedure, which estimates the probability of default on the basis of the current status of factors, a simulation-based rating generates scenarios for the future net cash flows of, for example, a special-purpose vehicle (SPV). This takes account of the entire term and structure of the exposure. In addition, the simulation also includes macroeconomic scenarios (e.g. inclusion of interest and exchange rates) where relevant.

The following table describes the various rating procedures in detail.

Business area	Subgroup	Rating/assessment procedures	Methodology
Private and investment customers	Employed natural persons	Sparkassen KundenScoring (SKS)	Scorecard-based rating procedure
	Private customers with main cash flow from renting and leasing	Segment real estate compact rating in Sparkassen Immobilienrating	Simulation-based rating procedure
Corporate customers	Basic customers	Sparkassen StandardRating plus customer compact rating (CCR)	Scorecard-based rating procedure
	Business customers	Sparkassen StandardRating plus customer compact rating (CCR)	Scorecard-based rating procedure
	Corporate customers	Sparkassen StandardRating plus customer compact rating (CCR)	Scorecard-based rating procedure
	Leasing customers	Scoring of leasing customers Rating of leasing customers	Scorecard-based rating procedure
	Corporate customers/ key accounts	Rating for corporates	Scorecard-based rating procedure
	Non-profit organizations	Basic RCP (risk classification procedure)	Expert-based procedure
Project and specialized lending exposures	National commercial real estate	Sparkassen Immobilienrating	Simulation-based rating procedure
	International commercial real estate	Rating for international commercial real estate (ICRE)	Simulation-based rating procedure
		Where applicable RCP slotting criteria approach	Slotting criteria
	Open-end real estate funds	Sparkassen Immobilienrating	Scorecard-based rating procedure
	Aircraft finance	Airlines: rating for corporates	Scorecard-based rating procedure
		SPC: rating for aircraft finance	Simulation-based rating procedure
		Where applicable RCP slotting criteria approach	Slotting criteria
	Other project finance	Rating for project finance	Simulation-based rating procedure
		Where applicable RCP slotting criteria approach	Slotting criteria
	SPC real estate leasing	Rating for leasing refinancing	Simulation-based rating procedure
	Leveraged finance	Rating for leveraged finance	Scorecard-based rating procedure

Business area	Subgroup	Rating/assessment procedures	Methodology
Wholesale	Banks	Rating for banks	Scorecard-based rating procedure
		Rating for DSGV-Haftungsverbund	Simulation-based rating procedure
	Insurance companies	Rating for insurance companies	Scorecard-based rating procedure
	Leasing companies	Rating for leasing companies	Scorecard-based rating procedure
	Securitization items against own ABCP programs	Internal Assessment Approach (IAA) for securitizations for Weinberg ABCP program	Simulation-based rating procedure
	Synthetic CDO securitization tranches	SFA is applied in the absence of an internal rating	Supervisory Formula Approach (SFA)
	Other securitization transactions	Internal assessment if external rating is to hand: RCP for ABS	Expert-based procedure
	National (German) administrative authorities/public-sector loans	Rating inheritance	n/a
	International administrative authorities	Rating for international administrative authorities	Scorecard-based rating procedure
	Municipal corporations	Sparkassen StandardRating	Scorecard-based rating procedure
		Corporates rating	Scorecard-based rating procedure
		Basic RCP	Expert-based procedure
	Sovereigns & transfer risks	Rating for country and transfer risks	Scorecard-based rating procedure
	Government-supported enterprises (GSE)	Rating for government supported enterprises	Scorecard-based rating procedure
	Funds (individual funds)	Rating procedure for funds	Scorecard-based rating procedure
Corporate Items	Strategic equity investments	Suitable rating in each case (bank equity investments rated with bank rating etc.) in the absence of any reason to dispense with a rating	Dependent on procedure
		Otherwise basic RCP	Expert-based procedure

Figure 19: LBBW's internal rating procedures (Article 452 (b) (i) CRR).

All rating methods yield a one-year local-currency PD. Any transfer risk is taken into account in a separate foreign currency (FC) rating. These PDs are transferred to a rating class using the master scale applied uniformly within Sparkassen-Finanzgruppe. The master scale comprises a total of 18 rating classes; of these, the first class is broken down into a further eight sub-classes and the last class before the default classes into a maximum of three sub-classes, depending on the rating procedure. Ratings 16 to 18 indicate default.

		LBBW rating master scale	Probability of default (%)
Ratings	Investment grade	1(AAAA)	0.00 %
		1(AAA)	0.01 %
		1(AA+)	0.02 %
		1(AA)	0.03 %
		1(AA-)	0.04 %
		1(A+)	0.05 %
		1(A)	0.07 %
		1(A-)	0.09 %
		2	0.12 %
		3	0.17 %
		4	0.26 %
		5	0.39 %
	Speculative grade	6	0.59 %
		7	0.88 %
		8	1.32 %
		9	1.98 %
		10	2.96 %
		11	4.44 %
		12	6.67 %
		13	10.00 %
		14	15.00 %
		15	20.00 %
		15B[1]	30.00 %
		15C[1]	45.00 %
	Default classes	16	100.00 %
		17	100.00 %
		18	100.00 %

Figure 20: LBBW rating master scale (Article 452 (b) (i) CRR).

1 Ratings 15(B) and 15(C) are currently used only for the following rating methodologies: Sparkassen KundenScoring, Sparkassen KundenKompaktRating, Sparkassen StandardRating, leveraged finance rating, scoring and rating for leasing customers.

Further use of internal estimates.

LBBW's internal rating procedures are important instruments in the credit process and in credit risk management. The rating results are incorporated in the lending process as a component of the credit application and the basis for calculating competency levels. In addition, the ratings are used as parameters in the credit risk strategy and for determining the level of attention required.

The ratings form the basis for integrated bank management consisting of portfolio management, pricing, capital allocation, stress-testing and risk-bearing capacity and are used as input for the calculation of allowances for losses on loans and advances under IFRS.

Control mechanisms for the rating systems.

Responsibility within LBBW for the rating systems lies with Credit Risk Control. Credit Risk Control plays the role of the credit risk control unit stipulated by Article 190 CRR and is responsible in particular for the design, selection, introduction, ongoing monitoring and performance of rating systems.

The credit risk control unit reports to senior management half-yearly on the performance of the internal rating procedures and processes. The forecasting quality is measured by a comparison of

the model forecasts with defaults which have occurred (backtesting). Key criteria are calibration (is the expected portfolio default rate (mean PD) consistent with the actual defaults?) and precision (does the rating method correctly separate good from bad customers?). Key findings from the rating process validation (ongoing rating controlling process and current local checks carried out by the Credit Risk Control Unit) are presented as part of the report on the performance of the ratings systems.

The Credit Risk Control Unit informs senior management annually of ratings-based analyses of the credit risk profile in accordance with Article 189 (3) CRR. Reporting must include, as a minimum, the risk profile by grade, migration across grades and a comparison of realized default rates per grade with expected default rates. Moreover, senior management is to receive an annual report on the activities of the Credit Risk Control Unit along with an overview of the methodology of risk classification and rating systems of LBBW in the form of a compact reference guide. The document will give a succinct overview of the theoretical principles, individual rating and risk classification methods of LBBW and of the review and validation of the rating procedure. This involves outlining the format of the model, the application area, results of the most recent validation and limits of the process for each rating procedure.

The majority of the rating procedures used by LBBW were developed in joint projects, whose joint activities were placed on an independent legal and organizational foundation through the establishment of Sparkassen Rating und Risikosysteme GmbH, Berlin (SR) and RSU Rating Service Unit GmbH & Co. KG, Munich (RSU). SR is responsible for processes for companies and business clients, private customers and commercial real estate financing. All other jointly developed procedures are regularly reviewed and, if necessary, adjusted by RSU with the assistance of LBBW's employees.

The rating systems of LBBW are subject to a regular review process, the central element of which is conducted under the guidance of RSU or SR (this activity has been outsourced in line with Section 25b of the German Banking Act and disclosed accordingly). Data is derived from the RSU data pool (Landesbanks' pool data) and the SR data pool (data pooled by the Landesbanks and savings banks).

The core element of the review process is the annual validation, the central task of which is backtesting, benchmarking and checking the model design and data quality. The results are submitted to a working group comprising methodology experts from all member institutions, which is responsible for independently reviewing the validation and ensuring the consistency of the methods used for all processes in all modules. Validation involves confirming, adjusting or optimizing the rating procedure and its parameter estimates as necessary. Before introducing modified procedures, LBBW performs a test to ensure that they are representative. In turn, this ensures that the rating procedures are also accurate and valid for the LBBW portfolio and can therefore be applied without restriction. Senior management is informed of the results of the pool validation in the case of every rating process. Management decides how representative the process is for LBBW's portfolio and whether the validation results can be put into practice. In addition, the correct use of rating systems is analyzed and evaluated extensively by a rating controlling process at LBBW, which also initiates and monitors any adjustments that may be required. Reports to that effect are sent on a quarterly basis to the top three management tiers of all relevant units of the Bank.

The review, validation and further development of the rating procedures are checked by the respective Internal Auditing units as independent units at RSU, SR and LBBW. Please note the introduction of an independent validation unit at the respective companies and at LBBW from 2018. In the case of LBBW, Internal Auditing also reviews the rating systems and their operations at least once a year in accordance with Article 191 CRR. The review includes checking compliance with all minimum requirements in accordance with Articles 142 to 191 CRR. This includes, among other things, a review of the correct application of the rating procedures, the efficacy of the internal control system and an assessment of the written policy.

Process of allocating items or borrowers to rating classes or risk pools.

The exposure classes are determined electronically at a system level downstream from the operational booking systems. As a rule, each transaction included in an IRBA portfolio is allocated to an exposure class normally on the basis of the rating procedure applied. If a clear allocation using the rating procedure is not possible, exposure classes are distinguished on the basis of additional information, such as customer group allocation or transaction-specific information such as collateral.

The following section describes the rating procedures used for the individual exposure classes and the area of applicability. Allocation forms a key aspect of capital backing activities.

Central governments and central banks exposure class.

Country and transfer risks are measured using a special rating procedure at LBBW. The key aspects entail the economic situation, the political environment as well as the domestic and foreign trade situation of the country in question. The rating procedure for country and transfer risks is used to classify exposures which are allocated to the IRBA exposure class »Central governments and central banks« in accordance with Article 147 (3) CRR and Articles 115 (2), 115 (4), 116 (4), 117 (2) and 118 CRR.

The rating methodology currently in use was developed at pool level by RSU in cooperation with the Landesbanken. It was developed following a statistical approach (mainly comparison with external ratings, plus factoring in internal default history). Expert assessments were also taken into account in order to ensure the economic plausibility of the model results.

RSU is also in charge of (further) developing the rating methodology in cooperation with the Landesbanken. Its (further) development is based on the data pool of many diverse institutions. The data pool mostly includes data from the institutions' internal systems, e.g. input values and default experiences over time. The analyses carried out as part of the regular care and validation at pool level are made available by RSU.

Banks exposure class.

The rating procedures for banks is applied to all borrowers which are allocated to the IRBA exposure class »Banks« under Article 147 (4) CRR and in the light of Articles 4 (1) Sentences 1, 2, 3, 115 (2) and (4), 116 (4), 117 and 119 (5) CRR. The purpose of the rating procedure for banks is to measure counterparty risks of banks worldwide. In terms of content, their use is limited to banks that mostly perform typical banking transactions (material interpretation of the term »bank«). Thus, bank holdings, home savings and loan associations, state finance agencies, financial and finance companies and financial service providers should also be rated with the banks module, regardless of their legal form, assuming they mostly perform typical banking transactions. Similarly, institutions which do not hold a banking permit but primarily engage de facto in quasi-banking business are rated with this procedure. Furthermore, only entities that are subject to regulation and therefore operate in a supervised environment are rated.

In accordance with Article 107 (3) CRR, non-EU investment firms, credit institutions, exchanges and clearing houses are treated as exposures to an institution only if the requirements applied to that entity are at least equivalent to those applied in the EU. If their requirements are not equivalent, they are treated as corporates.

The rating methodology currently in use was developed at pool level by RSU in cooperation with the Landesbanken. It followed a statistical approach (mainly comparison with internal default history and external ratings). Expert assessments were also taken into account in order to ensure the economic plausibility of the model results.

RSU is also in charge of (further) developing the rating methodology in cooperation with the Landesbanken. Its (further) development is based on the data pool of many diverse institutions. The data pool mostly includes data from the institutions' internal systems, e.g. input values and default experiences over time. The analyses carried out as part of the regular care and validation at pool level are made available by RSU.

Corporates exposure class.

The rating systems for corporate clients classify obligors assigned to IRBA exposure class »corporates« in accordance with Article 147 (7) CRR. The corporates rating is applied to a substantial part of the portfolio. Large domestic customers with consolidated sales of more than EUR 100 million and all international corporate customers are assessed using the »corporates« rating. Domestic borrowers with sales of less than EUR 100 million are rated using the Sparkassen StandardRating methodology and are included in the »corporates« exposure class. Also, customers assessed with the rating procedure for insurance companies are assigned to this class. The purpose of the rating procedure for insurance companies is to measure their counterparty risk. For this purpose, »insurance companies« also include companies that generate most of their income from typical insurance transactions, which also includes bancassurance providers.

All transactions to which the single funds rating method is applied are assigned to the corporates exposure class, as are the associated basic RCPs.

The rating methodologies currently in use were developed at pool level by RSU in cooperation with the Landesbanken. They were developed following a statistical approach (mainly comparison with internal default history and external ratings, depending on the availability of data). Expert assessments were also taken into account in order to ensure the economic plausibility of the model results.

RSU and SR are also in charge of (further) developing the rating methodology in cooperation with the Landesbanken. Its (further) development is based on the data pool of many diverse institutions. The data pool mostly includes data from the institutions' internal systems, e.g. input values and default experiences over time. The analyses carried out as part of the regular care and validation at pool level are made available by RSU and SR.

Corporates exposure class: specialized lending exposures.

The rating systems for specialized lending exposures are applied to obligors which are also assigned to the »specialized lending exposures« IRBA exposure class in accordance with Article 147 (8) CRR. They form a subclass of the »corporates« exposure class.

Ratings for project finance are normally based on the cash flow generated or the user/beneficiary of the results of the project. Compared with other types of specialized lending exposures, project finance is distinguished by the fact that net cash is generated from a narrowly defined activity rather than from several parallel business models. The simulation-based rating process is based on an economic model which reflects cause-and-effect correlations. Cash flows, the value of the item being financed, factors specific to the transaction as well as macroeconomic factors are used as major risk drivers in the simulation. The results of the simulation are transformed, calibrated and adjusted using qualitative factors.

Real estate lending business where the loan is serviced solely from income in the form of rental, lease or sales proceeds arising from the financed item is also assigned to the specialized lending exposures subclass. The rating procedure developed for this is based on the total international commercial real estate finance business if the property being financed is located abroad. The simulation-based rating process is based on an economic model which reflects cause-and-effect correlations. Cash flows, the value of the item being financed, factors specific to the transaction as well as macroeconomic factors are used as major risk drivers in the simulation. The results of the simulation are transformed, calibrated and adjusted using qualitative factors.

The rating procedure for aircraft finance is applied to finance for special-purpose vehicles (SPVs) and to direct loans to airlines in which there is a direct link to the financed asset (direct asset-linked loan, »virtual SPVs«). All financing coming within the scope of the rating procedure for aircraft finance is assigned to the specialized lending exposures exposure class. The simulation-based rating process is based on an economic model which reflects cause-and-effect correlations. Cash flows are not the main source of risk in the case of aircraft finance. Instead, the value of the aircraft, the default probability of the airlines and factors specific to the transaction as well as macroeconomic factors are used as major risk drivers in the simulation.

RSU is also in charge of (further) developing the rating methodology in cooperation with the Landesbanken. Its (further) development is based on the data pool of many diverse institutions. The data pool mostly includes data from the institutions' internal systems, e.g. input values and default experiences over time. The analyses carried out as part of the regular care and validation at pool level are made available by RSU.

Corporates/specialized lending exposures exposure class: SME check.

Under Article 147 (5) (a) (ii) CRR, the customer's (consolidated) annual sales are used as a size indicator (SME threshold).

Corporates are classified as SMEs if they have annual sales of EUR 50 million or less.

Equity investment exposure class.

Equity investments are handled by a special organizational unit. Depending on the type of equity investment, the same rating procedures can be used as for the exposure classes stated above. System allocations and product numbers ensure that they can be clearly identified and assigned to the aforementioned exposure classes or to the »equity investments« exposure class in accordance with Article 147 (6) CRR. In addition, some equity investments are measured using the standard approach in accordance with grandfathering rules (protection of pre-existing legal rights) (see »Own funds requirements«, page 36).

Retail business exposure class.

LBBW exposure positions which are classified as retail business are not yet measured using the IRB approach.

LBBW is targeting authorization to use self-estimated loss ratios (IRB Retail).

Coverage of exposure at default (EAD) reported under IRB

The following table gives an overview of the coverage of exposures (EAD) with an approved IRB rating method at Group level:

EAD after securitizations and credit risk mitigation				
Exposure class	CRSA in %	IRB in %	IRB implementation plan	Total
Central government and central banks	0.7	24.3	29.0	25.0
Banks	12.0	21.5	31.8[1]	33.5
Corporates – SMEs	0.5	2.9	3.3	3.4
Corporates – specialized financing	0.0	6.3	7.4	6.3
Corporates – other	2.3	23.0	27.1	25.3
Retail business	3.8	0.0	0.0	3.8
Equity investments	0.2	0.3	0.0[2]	0.5
Securitizations	0.0	1.4	1.4[3]	1.4
Other assets excl. loan commitments	0.0	0.8	0.0[4]	0.8
Total	**19.5**	**80.5**	**100.0**	**100.0**

1 Under Section 13 (4) No. 1) in conjunction with Section 13 (5) SolvV, inclusion of transactions with borrowers under the IRB model which belong to the Sparkassen Group-internal cross-guarantee system and to which a risk weight of 0 applies in the calculation of own funds requirements under CRSA.
Under Section 13 (2) No. 8 SolvV, transactions with central counterparties are excluded from the basis of calculation for the IRB coverage ratio
2 Under Section 13 (2) No. 1 1 SolvV, equity investments are excluded from the basis of assessment for the calculation of the IRB coverage ratio
3 Under Section 13 (2) in conjunction with Section 13 (4) SolvV, specific securitization positions are excluded from the basis of assessment for the IRB coverage ratio
4 Under Section 13 (2) No. 3 SolvV, other assets not relating to credit are excluded from the basis of assessment for the IRB coverage ratio

Figure 21: IRBA coverage in relation to the LBBW Group's exposure (EaD) (Article 452 (a) CRR in conjunction with Guidelines on disclosure requirements sub-section 103).

5.4 List of risk exposures.

The tables in this chapter list credit risks not including counterparty default risks.

The following table shows the total and average amount of net exposures at the end of the reporting period and as an average for the reporting period after allowances for losses on loans and advances. The figures are broken down by risk approach and exposure class.

EUR million Exposure class	Net value of risk exposures at the end of the reporting period	Average net value of risk exposures over the reporting period
Central governments or central banks	57 216	61 917
Banks	48 034	54 393
Corporates	107 914	110 038
of which specialized lending exposures	17 231	18 069
of which SMEs	10 351	8 723
Retail business	-	-
of which secured by mortgages on immovable property	-	-
of which SMEs	-	-
of which non-SMEs	-	-
of which qualified, revolving	-	-
of which other retail		-
of which SMEs	-	-
of which non-SMEs	-	-
Equity exposures	1 232	1 274
Other assets, not involving credit obligations	2 288	2 281
Total amount under IRB approach	**216 685**	**229 904**
Central governments or central banks	2	2
Regional governments or local authorities	396	3 706
Public-sector agencies	277	258
Multilateral development banks	-	-
International organizations	-	-
Banks	31 855	33 437
Corporates	11 532	10 682
of which SMEs	1 490	1 305
Retail business	8 612	8 539
of which SMEs	1 714	1 528
Secured by real estate	5 162	5 367
of which SMEs	135	73
Exposures in default	151	166
Items exposed to particularly high risk	-	-
Covered bonds	-	-
Risk exposure to banks and corporates with a short-term credit rating	0	0
Undertakings for collective investment	2	1
Equity exposures	414	432
Other items	36	114
Total amount under the Standardized Approach	**58 438**	**62 703**
Total amount	**275 123**	**292 606**

Figure 22: EU CRB-B – Total and average amount of exposures (Article 442 (c) CRR).

An increase in deposits with central banks led to an increase in exposures reported under the IRB exposure class of central governments and central banks compared with the previous year. The increase in the exposure classes of institutions and corporates reflects the general business performance.

The decline in exposures reported in the CRSA exposure class of regional governments and local authorities primarily reflects the repayment of the Sealink loan, which was secured by a maximum guarantee from the State of Baden-Württemberg of EUR 4.2 billion.
This trend is also clear in the following table.

The following table shows net risk exposures (after allowances for losses on loans and advances) by country, geographic area and CRR exposure class. Countries with risk values of over EUR 1 billion were classified as significant countries and are listed separately. »Other countries« are listed separately in the country allocation in the Appendix.

EUR million exposure class	Total Europe	Germany	Belgium	Finland	France	United Kingdom	Italy	Luxem-bourg	Nether-lands	Austria	Switzer-land	Spain	Turkey	Other counries - Europe
Central governments or central banks	46 851	42 399	410	360		363	1 351	30	102	238	672	154	2	769
Banks	42 198	10 312	279	573	6 968	17 455	34	150	1 162	553	2 514	75		2 124
Corporates	94 648	78 832	110	238	792	878	236	2 091	1 605	1 744	2 771	455	982	3 913
of which specialized lending exposures	12 696	7 871	43	106	262	610	130	1 438	208	30	24	395	197	1 382
of which SMEs	10 164	9 862	3			0		6	20	6	144	1	102	19
Retail business	-	-	-	-	-	-	-	-	-	-	-	-	-	-
of which secured by mortgages on immovable property	-	-	-	-	-	-	-	-	-	-	-	-	-	-
of which SMEs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
of which non-SMEs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
of which qualified, revolving	-	-	-	-	-	-	-	-	-	-	-	-	-	-
of which other retail	-	-	-	-	-	-	-	-	-	-	-	-	-	-
of which SMEs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
of which non-SMEs	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equity exposures	1 170	1 170	-	-	-	-	-	-	-	-	-	-	-	-
Other assets which are not loan commitments	654	646	-	-	-	0	-	-	2	1	4	-	-	-
Total amount under IRB approach	**185 521**	**133 360**	**799**	**1 171**	**7 760**	**18 696**	**1 622**	**2 271**	**2 871**	**2 536**	**5 961**	**683**	**984**	**6 807**
Central governments or central banks	2	2	-	-	-	-	-	-	-	-	-	-	-	-
Regional governments or local authorities	396	396	-	-	-	-	-	-	-	-	-	-	-	-
Public-sector agencies	277	277	-	-	-	-	-	-	-	-	-	-	-	-
Multilateral development banks	-	-	-	-	-	-	-	-	-	-	-	-	-	-
International organizations	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Banks	31 855	31 772	0	-	0	0	-	0	-	78	4	-	-	0
Corporates	10 650	7 868	8	3	37	2	58	73	148	74	63	20	274	2 023
of which SMEs	1 479	1 474	-	-	-	-	-	-	0	-	1	2	2	0
Retail business	8 581	8 512	1	0	10	5	1	1	2	4	36	3	0	5
of which SMEs	1 714	1 712		-	0					0	1			0
Secured by real estate	5 133	5 084	1	-	2	6	1	1	2	3	25	2	1	4
of which SMEs	135	134	-	-	-	-	-	-	-	-	-	0	-	0
Exposures in default	146	134	0	-	1	5	0	0	-	0	1	0	0	5
Items exposed to a particularly high risk	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Risk exposure to banks and corporates with a short-term credit rating	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Undertakings for collective investment	2	-	-	-	-	-	-	2	-	-	-	-	-	-
Equity exposures	400	393	0	-	0	1	-	-	-	-	6	-	-	-
Other items	35	35	-	-	-	-	-	-	-	-	1	-	-	-
Total amount under the Standardized Approach	**57 476**	**54 473**	**10**	**3**	**50**	**18**	**59**	**77**	**152**	**160**	**135**	**25**	**275**	**2 038**
Total	**242 997**	**187 833**	**809**	**1 174**	**7 810**	**18 714**	**1 681**	**2 348**	**3 023**	**2 696**	**6 096**	**708**	**1 259**	**8 845**

Figure 23: EU CRB-C – Geographic distribution of exposures (Article 442 (d) CRR).

Total America	Canada	USA	Other countries - America	Total Asia/Pacific region	Republic of Korea	Other countries - Asia/Pacific region	Total Other countries - other	Other countries	Total
5 414		5 409	5	1 095	371	724	3 856	3 856	57 216
4 069	1 196	2 563	310	1 767	67	1 700	0		48 034
10 357	160	9 341	856	2 497	703	1 794	413	413	107 914
4 476	151	4 086	239	60		60	0		17 231
104	0	34	70	83	12	71	0	0	10 351
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
62	-	62	-	-	-	-	1	1	1 232
19	-	18	1	-	-	0	1 615	1 615	2 288
19 920	**1 356**	**17 393**	**1 171**	**5 360**	**1 141**	**4 218**	**5 884**	**5 884**	**216 685**
-	-	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	396
-	-	-	-	-	-	-	-	-	277
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
0	-	0		-	-	-	0	0	31 855
723	1	104	618	141	1	140	18	18	11 532
2			2	7	-	7	2	2	1 490
12	0	10	2	18	1	17	1	1	8 612
0		0		0	-	0	0	0	1 714
17	0	15	2	12	1	10	0	0	5 162
0	-	-	-	-	-	-	0		135
4	0	1	3	0	-	0	0	0	151
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
0	-	-	-	-	-	-	-	-	2
12		0	12	3	-	3	-	-	414
0	-	0	-	-	-	-	0	0	36
770	**2**	**131**	**637**	**174**	**3**	**171**	**19**	**19**	**58 439**
20 690	**1 358**	**17 524**	**1 808**	**5 533**	**1 144**	**4 389**	**5 904**	**5 904**	**275 124**

The following table shows risk exposure by allowances for losses on loans and advances by sector and CRR exposure class.

The grouping of exposures by industry is in accordance with the Bundesbank industry key which was applicable in 2017. Activities which are especially relevant to LBBW have been removed from the industry classification and are shown separately. »Other manufacturing« includes manufacturing activities whose individual volume does not exceed 1 % of total risk exposure. »Other industries« includes all Bundesbank industries whose individual volume does not exceed 1 % of total risk exposure.

EUR million Exposure class	Banks and central banks	Other financial institutions	Other financial and insurance services	Public administration, defense, social security	Private households	Real estate and housing	Energy supply	Mechanical engineering
Central governments or central banks	28 002	4 197	3	21 986	0	131	453	-
Banks	37 921	9 027	798	182	0	95	-	-
Corporates	3 295	7 783	5 918	270	1 198	23 894	4 949	7 484
of which specialized lending exposures	-	421	94	6	1	12 241	2 994	34
of which SMEs	-	32	145	81	497	3 370	141	728
Retail business	-	-	-	-	-	-	-	-
of which secured by mortgages on immovable property	-	-	-	-	-	-	-	-
of which SMEs	-	-	-	-	-	-	-	-
of which non-SMEs	-	-	-	-	-	-	-	-
of which qualified, revolving	-	-	-	-	-	-	-	-
of which other retail	-	-	-	-	-	-	-	-
of which SMEs	-	-	-	-	-	-	-	-
of which non-SMEs	-	-	-	-	-	-	-	-
Equity exposures	874	26	11	15	0	45	-	-
Other assets which are not loan commitments	19	44	-	0	446	3	-	1
Total amount under IRB approach	**70 111**	**21 078**	**6 730**	**22 452**	**1 644**	**24 168**	**5 401**	**7 485**
Central governments or central banks	-	-	-	-	-	-	-	-
Regional governments or local authorities	-	-	-	376	2	-	0	-
Public-sector agencies	0	-	-	185	83	-	-	-
Multilateral development banks	-	-	-	-	-	-	-	-
International organizations	-	-	-	-	-	-	-	-
Banks	31 823	13	-	-	-	-	-	-
Corporates	98	2 632	679	530	418	300	244	259
of which SMEs	-	35	33	0	25	63	23	11
Retail business	-	10	96	0	6 208	86	14	60
of which SMEs	-	6	47	-	35	27	4	30
Secured by real estate	-	3	25	-	4 694	57	1	1
of which SMEs	-	1	6	-	40	10	1	
Exposures in default	-	4	6	0	67	2	1	1
Items exposed to a particularly high risk	-	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-	-
Risk exposure to banks and corporates with a short-term credit rating	-	-	-	-	-	-	-	-
Undertakings for collective investment	-	2	-	-	-	-	-	-
Equity exposures	359	1	0	6	0	18	-	-
Other items	4	-	-	8	-	-	-	-
Total amount under the Standardized Approach	**32 284**	**2 665**	**807**	**1 105**	**11 471**	**463**	**261**	**321**
Total	**102 395**	**23 743**	**7 538**	**23 558**	**13 115**	**24 631**	**5 663**	**7 806**

Figure 24: EU CRB-D – Sector risk concentrations (Article 442 (e) CRR).

Automotive production including components	Other manufacturing	Professional, scientific and technical activities	Trade, maintenance and repair of motor vehicles	Information and communication	Transport and storage	Water supply, waste-water and waste management	Other sectors	Total
-	-	22	3	4	146	1 779	490	57 216
-	0	10	-	-	-	-	-	48 034
4 167	15 909	11 771	7 589	3 897	2 243	857	6 690	107 914
2	97	378	40	22	343	63	496	17 231
64	1 680	676	713	174	212	95	1 743	10 351
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	0
-	-	140	-	73	-	-	49	1 232
-	4	-	0	-	-	-	1 771	2 288
4 167	**15 913**	**11 943**	**7 592**	**3 974**	**2 389**	**2 636**	**9 000**	**216 685**
-	-	-	-	-	-	-	2	2
-	-	-	-	-	-	4	14	396
-	-	-	-	-	-	-	10	277
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	18	31 855
477	1 259	546	668	173	411	46	2 794	11 532
7	204	22	95	21	164	13	775	1 492
12	388	341	368	64	111	28	825	8 612
8	157	83	142	20	59	16	1 080	1 714
1	17	110	35	22	4	0	190	5 162
0	7	18	14	5	1	0	33	135
0	15	3	6	1	3	1	43	151
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	0
-	-	-	-	-	-	-	-	2
-	-	7	-	2	-	-	22	414
-	-	-	-	-	-	-	23	36
490	**1 679**	**1 006**	**1 076**	**262**	**528**	**78**	**3 941**	**58 439**
4 657	**17 592**	**12 949**	**8 668**	**4 236**	**2 917**	**2 715**	**12 941**	**275 124**

The following table breaks down on-balance-sheet exposures net of allowances for losses and advances by remaining maturity and CRR exposure class. Unlike the previous tables, in accordance with the Guideline, only on-balance-sheet transactions are to be reported.

EUR million	Net exposure value					
Exposure class	On demand	< = 1 year	> 1 year < = 5 years	> 5 years	No stated maturity	Total
Central governments or central banks	25 081	6 067	5 201	16 644	-	52 992
Banks	4 921	29 371	9 677	2 732	-	46 701
Corporates	2 964	14 255	25 014	27 071	-	69 304
of which specialized lending exposures	71	1 274	6 776	7 756	-	15 878
of which SMEs	460	844	1 538	4 237	-	7 080
Retail business	-	-	-	-	-	-
of which secured by mortgages on immovable property	-	-	-	-	-	-
of which SMEs	-	-	-	-	-	-
of which non-SMEs	-	-	-	-	-	-
of which qualified, revolving	-	-	-	-	-	-
of which other retail	-	-	-	-	-	-
of which SMEs	-	-	-	-	-	-
of which non-SMEs	-	-	-	-	-	-
Equity exposures	-	-	-	-	1 232	1 232
Other assets, not involving credit obligations	-	-	-	-	2 288	2 288
Total amount under IRB approach	**32 965**	**49 693**	**39 893**	**46 447**	**3 520**	**172 518**
Central governments or central banks	2	0	0		-	2
Regional governments or local authorities	193	7	15	16	-	231
Public-sector agencies	1	80	20	147	-	248
Multilateral development banks	-	-	-	-	-	-
International organizations	-	-	-	-	-	-
Banks	5 147	3 081	2 838	18 210	-	29 276
Corporates	1 958	2 438	4 049	1 816	-	10 260
of which SMEs	6	59	641	311	-	1 016
Retail business	262	624	1 599	2 914	0	5 399
of which SMEs	47	147	1 043	142	0	1 379
Secured by real estate	22	45	328	4 758	-	5 153
of which SMEs	8	4	23	99	-	133
Exposures in default	51	5	25	65	-	146
Items exposed to particularly high risk	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-
Risk exposure to banks and corporates with a short-term credit rating	-	-	-	-	-	-
Undertakings for collective investment	2	-	-	-	-	2
Equity exposures	-	-	-	-	414	414
Other items	-	-	-	-	36	36
Total amount under the Standardized Approach	**7 637**	**6 280**	**8 874**	**27 925**	**450**	**51 167**
Total amount	**40 602**	**55 973**	**48 768**	**74 372**	**3 971**	**223 685**

Figure 25: EU CRB-E Breakdown of exposures by residual maturity (Article 442 (f) CRR).

5.5 Credit quality of exposures.

The following tables show the credit quality of on-balance-sheet and off-balance-sheet exposures, not including counterparty credit risk, broken down by exposure class and credit risk approach. The reported credit risk adjustments are last year's audited figures for COREP reporting. Further on, there is a breakdown by sector and country.

Defaulted exposures under the CRS approach are shown both in the defaulted exposures exposure class and in the original exposure class before default. However, the figure is only included once in the total exposures under the CRS approach.

EUR million	Gross carrying values of						
Exposure class	Defaulted exposures	Non-defaulted exposures	Specific credit risk adjustments	General credit risk adjustments	Accumulated write-offs	Credit risk adjustment charges of the period	Net values
Central governments or central banks	-	57 217	0	-	-	-	57 216
Banks	1	48 035	2	-	-	-	48 034
Corporates	1 028	107 262	376	-	17	-	107 914
of which specialized lending exposures	83	17 171	23	-	1	-	17 231
of which SMEs	253	10 181	83	-	-	-	10 351
Retail business	-	-	-	-	-	-	-
of which secured by mortgages on immovable property	-	-	-	-	-	-	-
of which SMEs	-	-	-	-	-	-	-
of which non-SMEs	-	-	-	-	-	-	-
of which qualifying revolving	-	-	-	-	-	-	-
of which other retail	-	-	-	-	-	-	-
of which SMEs	-	-	-	-	-	-	-
of which non-SMEs	-	-	-	-	-	-	
Equity exposures	-	1 232		-	-	-	1 232
Other assets excl. loan commitments	-	2 288	0	-	-	-	2 288
Total amount under IRB approach	**1 029**	**216 034**	**378**	**-**	**17**	**-**	**216 685**
of which loans*)	840	126 236	338	-	17	-	126 738
of which debt securities*)	-	31 103	0	-	-	-	31 103
of which off-balance-sheet exposures*)	129	41 478	40	-	-	-	41 567
Central governments or central banks	-	2	-	-	-	-	2
Regional governments or local authorities	-	396	0	-	-	-	396
Public-sector agencies	0	277	0	-	-	-	277
Multilateral development banks	-	-	-	-	-	-	-
International organizations	-	-	-	-	-	-	-
Banks	-	31 855	0	-	-	-	31 855
Corporates	167	11 538	116	-	6	-	11 588
of which SMEs	17	1 492	7	-	-	-	1 502
Retail business	145	8 619	58	-	4	-	8 706
of which SMEs	25	1 715	8	-	-	-	1 732
Secured by real estate	-	5 165	3	-	-	-	5 162
of which SMEs	-	135	0	-	-	-	134
Exposures in default	312	-	161	-	-	-	151
Items exposed to a particularly high risk	-	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-	-
Risk exposure to banks and corporates with a short-term credit rating	-	0	-	-	-	-	0
Undertakings for collective investment	-	2	-	-	-	-	2
Equity exposures	-	414	-	-	-	-	414
Other items	-	36	-	-	-	-	36
Total amount under the Standardized Approach	**312**	**58 304**	**177**	**-**	**11**	**-**	**58 439**
of which loans*)	282	43 931	175	-	11	-	44 038
of which debt securities*)	-	183	-	-	-	-	183
of which off-balance-sheet exposures*)	6	6 613	1	-	-	-	6 618
Total	**1 341**	**274 338**	**555**	**-**	**28**	**-**	**275 124**
of which loans*)	1 122	170 167	513	-	28	-	170 776
of which debt securities*)	-	31 286	-	-	-	-	31 286
of which off-balance-sheet exposures*)	135	48 091	41	-	-	-	48 185

Figure 26: EU CR1-A - Credit quality of exposures by exposure classes and instruments (Article 442 (g) and (h) CRR).

*) figures as per FINREP.

The following table breaks down exposures by industry in accordance with CRR.

The grouping of exposures by industry is in accordance with the Bundesbank industry key which was applicable in 2017. Activities which are especially relevant to LBBW have been removed from the industry classification and are shown separately. »Other manufacturing« includes manufacturing activities whose individual volume does not exceed 1 % of total risk exposure. »Other industries« includes all Bundesbank industries whose individual volume does not exceed 1 % of total risk exposure.

EUR million	Gross carrying value of						
Industry sector	defaulted exposures	Non-defaulted exposures	Specific credit risk adjustments	General credit risk adjustments	Accumulated write-offs	Credit risk adjustment charges	Net values
Central banks and banks	1	102 432	4	-	-	-	102 429
Other financial institutions	56	23 786	42	-	3	-	23 800
Other financial and insurance services	4	7 027	2	-	1	-	7 029
Public administration, defense, social security	0	23 550	1	-	-	-	23 550
Private households	129	13 324	37	-	2	-	13 416
Real estate and housing	134	24 545	45	-	4	-	24 634
Energy supplies	63	5 619	19	-	1	-	5 663
Mechanical engineering	104	7 736	33	-	1	-	7 807
Automotive production including components	29	4 644	16	-	2	-	4 657
Other manufacturing	335	17 380	123	-	5	-	17 591
Professional, scientific and technical activities	64	12 979	39	-	1	-	13 004
Trade, maintenance and repair of motor vehicles	168	8 616	116	-	1	-	8 668
Information and communication	17	4 254	6	-	0	-	4 265
Transport and storage	8	2 915	6	-	1	-	2 917
Water supply, waste-water and waste management	4	2 713	3	-	-	-	2 715
Other sectors	225	12 817	63	-	5	-	12 979
Total	**1 341**	**274 338**	**555**	-	**28**	-	**275 124**

Figure 27: EU CR1-B - Credit quality of exposures by industry sector (Article 442 (g) and (h) CRR).

The following table shows the gross carrying amounts of defaulted and past-due (within the 90-day period), but not impaired exposures by industry sector.

EUR million	Gross carrying values of	
Industry sector	defaulted exposures	Past-due exposures without impairment requirement
Central banks and banks	1	6
Other financial institutions	56	7
Other financial and insurance services	4	0
Public administration, defense, social security	0	0
Private households	129	0
Real estate and housing	134	5
Energy supplies	63	1
Mechanical engineering	104	23
Automotive production including components	29	45
Other manufacturing	335	67
Professional, scientific and technical activities	64	25
Trade, maintenance and repair of motor vehicles	168	82
Information and communication	17	0
Transport and storage	8	1
Water supply, waste-water and waste management	4	0
Other sectors	225	11
Total	**1 341**	**275**

Figure 28: Defaulted and past-due but not impaired exposures by industry sector (Article 442 (g) (i) CRR).

The following table breaks down exposure by country and geographic area. Significant countries which are listed separately are defined as countries in which LBBW has an exposure of over EUR 1bn.

EUR million	Gross carrying values of						
Countries	defaulted exposures	non-defaulted exposures	Specific credit risk adjustments	General credit risk adjustments	Accumulated write-offs	Credit risk adjustment charges in the reporting period	Net values
Total Europe	**1 260**	**247 719**	**541**	**-**	**28**	**-**	**248 438**
Germany	1 132	188 779	481	-	28	-	189 431
Belgium	0	809	0	-	-	-	809
Finland	1	1 173	0	-	-	-	1 174
France	2	7 811	1	-	-	-	7 812
United Kingdom	5	18 718	3	-	-	-	18 719
Italy	1	1 681	0	-	-	-	1 681
Luxembourg	16	2 338	6	-	-	-	2 348
Netherlands	0	3 024	1	-	-	-	3 023
Austria	0	2 696	1	-	-	-	2 696
Switzerland	1	6 096	2	-	-	-	6 096
Spain	73	666	30	-	-	-	709
Turkey	0	1 261	2	-	-	-	1 259
Other countries – Europe	29	12 668	14	-	-	-	12 682
Total America	**56**	**20 732**	**9**	**-**	**-**	**-**	**20 779**
Canada	0	1 358	0	-	-	-	1 358
USA	5	17 481	2	-	-	-	17 484
Other countries – America	51	1 894	7	-	-	-	1 938
Total Asia/Pacific	**25**	**5 516**	**4**	**-**	**-**	**-**	**5 537**
Republic of Korea		1 146	0	-	-	-	1 146
Other countries – Asia/Pacific	25	4 370	4	-	-	-	4 391
Total other countries	**0**	**371**	**2**	**-**	**-**	**-**	**370**
Other countries	0	371	2	-	-	-	370
Total	**1 341**	**274 338**	**555**	**-**	**28**	**-**	**275 124**

Figure 29: EU CR1-C - Credit quality of exposure by country and geographic area (Article 442 (g) and (h) CRR).

The following table shows the gross carrying amounts of defaulted and past-due exposures (within the 90-day period), but no impaired by country and geographic area.

EUR million	Gross carrying amount of	
Countries	defaulted exposures	Past-due exposures without impairment requirement
Total Europe	**1 260**	**256**
Germany	1 132	182
Belgium	0	0
Finland	1	0
France	2	7
United Kingdom	5	9
Italy	1	11
Luxembourg	16	0
Netherlands	0	7
Austria	0	4
Switzerland	1	11
Spain	73	1
Turkey	0	0
Other countries – Europe	29	23
Total America	**56**	**14**
Canada	0	0
USA	5	11
Other countries – America	51	2
Total Asia/Pacific	**25**	**5**
Republic of Korea	0	0
Other countries - Asia/Pacific	25	5
Total other countries	**0**	**0**
Other countries	0	0
Total	**1 341**	**275**

Figure 30: Defaulted and past-due but not impaired exposures by country and geographical area (Article 442 (g) (i) CRR).

Expected and actual losses from traditional lending business

The following table compares expected and actual losses for transactions reported under the IRB approach in accordance with CRR. The figures relate only to traditional lending business (excluding banking book securities, securitizations or derivatives) for the respective exposure classes.

Actual losses are defined as the total of direct write-downs and the total of additions and reversals of specific valuation allowances/provisions less recoveries on loans and advances already written off. Expected losses (EL) are calculated in accordance with the IRB approach and only include lending business with a probability of default (PD) of less than 100 % as at 1 January 2017.

EUR million	Period 1 Jan. 2017 to 31 Dec. 2017		Period 1 Jan. 2016 to 31 Dec. 2016		Period 1 Jan. 2015 to 31 Dec. 2015	
Exposure class	Expected loss (EL)	Actual loss	Expected loss (EL)	Actual loss	Expected loss (EL)	Actual loss
Central governments	2	3	4	0	1	1
Banks	5	5	3	2	11	0
Total corporates	159	85	134	41	172	61
- of which corporates	79	60	81	25	86	51
- of which SMEs	33	25	16	10	21	8
- of which specialized lending exposures	47	0	37	7	65	1
Equity exposures	8	26	8	17	7	74
Retail business	-	-	-	-	-	-
Total	**173**	**118**	**150**	**60**	**191**	**136**

Figure 31: Expected and actual losses from traditional lending
(Article 452 (i) CRR).

5.6 Non-performing exposures.

Definitions of impaired performance.

An exposure is deemed to be impaired when there is objective evidence of impairment (an »impairment trigger«). Objective evidence of impairment includes, in particular, significant financial difficulties of the obligor, a breach of contract (the obligor is in default or past due payments of interest and/or principal) or a greater likelihood of the obligor filing for bankruptcy. LBBW is guided by the regulatory definition of default in respect of the decisive definition of default for accounting purposes as »impaired«. An exposure shall be deemed to be defaulted in the sense of the regulatory definition in Article 178 CRR when at least one of the following events has taken place:

- there has been a default in payment/overdraft of > 90 days
- there is unlikeliness to pay (doubts about obligor's creditworthiness)
- the exposure has been rescheduled/restructured
- there has been a sale of the credit obligation
- it has been called/repaid
- the obligor has filed for bankruptcy
- the exposure has been fully written off.

Credit exposures past due are exposures which are past due by a certain number of days at individual transaction level. Such exposures then lead to the default of the obligor if the obligor has breached the materiality threshold by more than 90 consecutive days on the sum of all the credit lines available to that obligor. Amounts past due are regarded as material and relevant if they exceed a minimum threshold of 2.5 % (at least EUR 100) of all the credit lines available to the obligor.

Transactions which are not impaired and are reported as being past due by more than 90 days at individual transaction level are mostly significant exposures for which there are objective indications for impairment, but for which an individual valuation does not lead to any provision. The estimated expected cash flows as part of this valuation are in line with and/or exceed the carrying amount, hence no impairment is required (e.g. if there is sufficient collateral). These exposures are included in the portfolio impairments. As at 31 December 2017, total non-impaired transactions past due by more than 90 days amounted to EUR 84 million.

Methods of loan loss provisioning.

Allowances for losses on loans and advances take the form of credit risk adjustments on financial instruments which are reported under exposures. These include all credits which are not measured at fair value. Adjustments are made for off-balance-sheet transactions (committed by undrawn credit lines and contingent liabilities) through provisions. In the case of write-downs, a difference is made between specific valuation allowances, collective valuation allowances and portfolio valuation allowances.

A write-down is generally created where there are objective indications of impairment. If this is the case, specific valuation allowances are recognized for significant receivables and collective valuation allowances for insignificant receivables. LBBW uses the discounted cash-flow method to determine specific valuation allowances. The impairment requirement is calculated as the difference between the carrying amount of the asset and the net present value of the sum of all expected future cash flows (including proceeds from the sale of collateral).

If there is no such evidence, then portfolio valuation allowances are made since it is fair to assume that certain risks have already occurred but were not yet recognized. Collective valuation allowances are set aside based on an expected loss calculation. The expected loss is transformed into an incurred loss using Loss Identification Period factors which map the period between the time at which a loss event has occurred and its identification.

The following table shows the changes in the holdings of general and specific valuation allowances against the previous period. The table shows the audited valuation allowances for 2017 under FINREP. A comparison of the opening balance with the previous year-end figure is not possible since, for reasons of materiality, the previous year's table only showed the figures for LBBW (Bank) and the SüdLeasing Group. The other subsidiaries are included in this report for the first time.

EUR million	Accumulated specific credit risk adjustment	Accumulated general credit risk adjustment
Opening balance	**691**	**109**
Increases due to amounts set aside for estimated loan losses during the period	180	49
Decreases due to amounts reversed for estimated loan losses during the period	102	62
Decreases due to amounts taken against accumulated credit risk adjustments	190	0
Transfers between credit risk adjustments	1	- 1
Impact of exchange rate fluctuations	- 1	0
Business combinations, including acquisitions and disposals of subsidiaries	-	-
Other adjustments	- 10	0
Closing balance	**569**	**95**
Recoveries on credit risk adjustments recorded directly to the statement of profit or loss	14	0
Specific credit risk adjustments directly recorded to the statement of profit or loss	- 24	0

Figure 32: EU CR2-A - Changes in holdings of general and specific credit risk adjustments (Article 442 (i) CRR).

The following table shows the holdings of defaulted and impaired loans and debt securities as at 31 December 2017 in accordance with FINREP. Since we are required to publish this table for this first time, it does not yet include a flow statement.

EUR million	Gross carrying values of defaulted exposures
Opening balance	-
Loans and debt securities that have defaulted or been impaired since the last reporting period	-
Returned to non-defaulted status	-
Amounts written off	-
Other changes	-
Closing balance	**1 201**

Figure 33: EU CR2-B - Changes in the holdings of defaulted and impaired loans and debt securities (Article 442 (i) CRR).

The following table shows the past-due exposures in accordance with FINREP broken down according to the number of days of the oldest past-due exposure per customer.

EUR million	Gross carrying values					
	≤ 30 days	>30 days ≤ 60 days	> 60 days ≤ 90 days	> 90 days ≤ 180 days	> 180 days ≤ 1 year	> 1 year
Loans	293	43	64	58	136	440
Debt securities	-	-	-	-	-	-
Total exposures	**293**	**43**	**64**	**58**	**136**	**440**

Figure 34: EU CR1-D - Maturity structure of past-due exposures (Article 442 (g) and (h) CRR).

Restructuring of exposures.

A credit shall be classified as a forborne exposure (FBE – exposures with concessions in view of financial difficulties) if the following conditions apply:

- The debtor faces or is about to face financial difficulties, and
- The bank then makes concessions towards the debtor for which it does not receive any compensation from the debtor and these concessions are justified by the financial difficulties.

LBBW defines rescheduling as the crisis-led and unavoidable (loss-making) restructuring of a loan (debt restructuring) with the aim of bringing about a cure of the customer or individual exposures.

The following table shows non-performing and forborne exposures according to FINREP, split by debt securities, loans and advances and off-balance-sheet exposures.

EUR million	Gross carrying amounts of performing and non-performing exposures							Accumulated impairments and provisions and negative fair value adjustments due to credit risk				Collaterals and financial guarantees received	
				Of which non-performing				On performing exposures		On non-performing exposures		On non-performing exposures	Of which forborne exposures
		Of which performing but past due > 30 days and <= 90 days	Of which performing forborne		Of which defaulted	Of which impaired	Of which forborne		Of which forborne		Of which forborne		
Debt securities	22 181	0	0	0	0	0-	0	- 1	0	0	0	0	0
Loans and advances	176 778	106	390	1 228	1 201	1 075	469	- 94	- 4	- 570	- 171	89	132
Off-balance-sheet exposures	51 840	0	0	200	199	0	0	33	1	40	0	1	0

Figure 35: EU CR1-E - Non-performing and forborne exposures (Article 442 (g) and (i) CRR).

6 Credit risk mitigation techniques (Article 453 CRR).

6.1 Main types of collateral.

Lending business.

Registered liens, guarantees, financial assets and credit derivatives are recognized as risk-mitigating.

- Real estate secured by liens in Germany: These are residential real estate properties as well as office, retail, warehousing and city hotel real estate.
- Guarantees/warranties from domestic and foreign local authorities, banks and corporates, as well as guarantees mainly from government export credit insurers. These are generally guarantors with an investment-grade rating. Valuation are carried out strictly by Risk Management by way of creditworthiness checks and the assignment of a rating. Appropriate limits are set, depending on economic capacity. Guarantees/warranties taken over are included in the respective limit.
- Financial collateral: This includes
  - pledging of balances with banks and insurance companies
  - assignment of claims in connection with endowment policies
  - pledging of deposits with a daily revaluation based on closing prices of recognized stock exchanges.

Capital markets business.

In addition to traditional collateral in lending business, LBBW also utilizes various hedging instruments to mitigate risk in trading and capital markets business for regulatory purposes. As at 31 December 2017, no credit derivatives were used in the banking book as part of the credit risk mitigation techniques. The following types of collateral are primarily used:

- Financial collateral (securities, cash collateral)
- Eligible guarantees
- Netting agreements for derivatives plus collateral agreements (in accordance with chapter 7)

The main hedging instruments used by LBBW are also employed for regulatory purposes as they satisfy the requirements of eligible credit risk mitigation techniques.

The LBBW subsidiaries do not use any credit risk mitigation techniques going beyond those of LBBW (Bank).

Credit derivatives.

Credit derivatives can be eligible as unfunded credit protection and be recognized as an eligible form of credit risk mitigation. The relevant credit derivatives include the following pursuant to Article 204 (1) CRR:

- credit default swaps
- total return swaps
- credit linked notes (CLN) to the extent of their cash funding, and
- instruments that may be composed of such credit derivatives or that are economically effectively similar.

CRR gives a comprehensive list of all eligible guarantors allowed to provide guarantees as unfunded credit protection. These rules are taken into account when selecting a guarantor. Likewise, CRR requirements are complied with if they are relevant to the respective issue. The process for recognizing a credit derivative as credit protection is documented in the relevant internal rules. Legal efficacy is ensured at all times; at the same time, the underlying legal conditions are subject to ongoing observation. The guarantors (counterparties) and their default risk/creditworthiness are monitored. There are defined procedures to ensure that the risk transfer of the credit derivative is effective. As at the present reporting date, LBBW does not recognize any credit derivatives as credit risk mitigating. A disclosure pursuant to Article 453 (d) CRR is therefore not necessary.

Netting.

At LBBW, risk mitigation measures in connection with derivative counterparty risk exposures are applied by means of contractual netting and collateralization agreements and the use of central counterparties (e.g. LCH Clearnet Ltd).

6.2 Principles for assessing collateral.

The procedures for measuring and managing the eligible collateral are set out in the Bank's rules. The internal processes and systems ensure that collateral is only used for weighting if it meets all CRR requirements. If a significant positive correlation between the value of an item of collateral and the borrower providing the collateral is established, then collateral in question is not included. In the case of standard collateral located in Germany, the model contracts issued by Deutscher Sparkassen- und Giroverband are mostly used to mitigate legal risks. In addition, the Legal department has drafted contract templates which are used by the divisions after approval for individual cases. Legal efficacy is ensured at all times; at the same time, the underlying legal conditions are subject to ongoing observation.

The initial valuation of real estate property is carried out on the basis of set methods:

- Small loans in accordance with Section 24 BelWertV (Regulation on the Determination of Mortgage Lending Value - Beleihungswertermittlungsverordnung) (property located in Germany may be used as collateral if the loan amount to be secured by the property including all previous encumbrances does not exceed EUR 400,000. Where the property is partly used for commercial purposes, however, the part of the income this accounts for may not exceed one third of the gross income). The collateral is measured using a computer-aided program (LORAWeb) which holds data on a property's location, characteristics and equipment. The market value is calculated based on normal purchase prices, taking into account property location and characteristics, as mentioned above. At the same time, a lower mortgage lending value is calculated which can be achieved on a sustained basis even in the event of a change in market conditions. The property must also be inspected. If the inspection of the property reveals anything detrimental, then the market and mortgage lending value must be reduced.
- Residential real estate properties outside the scope of the small loans limit and commercial properties in Germany: valuation is carried out by a qualified valuer in accordance with Section 6 BelWertV. As part of the valuation, the market and mortgage lending values are calculated using separate valuation methods.
- Monitoring real estate markets: LBBW uses the market fluctuation concept of the Association of German Public Sector Banks (Bundesverband öffentlicher Banken) and of the German Savings Banks Finance Group (Deutscher Sparkassen- und Giroverband) to monitor the domestic real estate market in order to determine which real estate properties require a special review.
- Review of real estate valuations: Property valuations are reviewed where appropriate, if events come to notice which could have an impact on the valuation (e.g. extensive flooding) or where the market fluctuation concept shows a decline in market value over and above the limits (10 % for properties for commercial use; 20 % for properties for residential use) and valuations are reviewed every three years in the case of loans exceeding the limit mentioned in Article 208 (3b) CRR.

6.3 Management of concentration risks in the credit and collateral portfolio.

In measuring the risk arising from collateral, LBBW distinguishes between collateral in traditional lending business and collateral in capital markets business.

In traditional lending business, options exist for evaluating real estate, e.g. according to region or type of use.

Concentrations of collateral in capital markets business are limited by a restrictive collateral policy. Individual and portfolio risks (e.g. those in relation to repo and securities lending transactions) are regularly monitored by means of a trading-internal steering committee. Concentrations of collateral in the case of OTC derivatives are prevented by only accepting cash collateral or first class sovereign bonds. In addition, continuous measurement of collateral contributes to risk limitation.

The collateral portfolio for OTC derivatives is documented on a monthly basis in management reporting and includes statistical information as well as details of the largest providers and takers of collateral within LBBW.

The following table shows secured and unsecured exposures for exposures not including counterparty credit risk, as well as the collateral, financial guarantees and derivatives used for credit risk mitigation.

EUR million Exposure class	Exposures unsecured – carrying amount	Exposures secured – carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
Central governments or central banks	54 027	3 190	3 087	66	-
Banks	18 917	29 117	23 242	181	-
Corporates	**82 770**	**25 145**	**17 361**	**4 180**	**-**
of which specialized lending exposures	12 098	5 134	3 904	318	-
of which SMEs	6 144	4 207	3 097	453	-
Retail business	-	-	-	-	-
of which secured by mortgages on immovable property	-	-	-	-	-
of which SMEs	-	-	-	-	-
of which non-SMEs	-	-	-	-	-
of which qualified, revolving	-	-	-	-	-
of which other retail	-	-	-	-	-
of which SMEs	-	-	-	-	-
of which non-SMEs	-	-	-	-	-
Equity exposures	1 232	-	-	-	-
Other assets, not involving credit obligations	2 288	-	-	-	-
Total amount under IRB approach	**159 234**	**57 451**	**43 690**	**4 426**	**-**
of which credits*)	102 057	54 278	34 630	3 351	-
of which debt securities*)	28 259	10 102	8 379	138	-
of which off-balance-sheet exposures*)	536	288	96	76	-
Central governments or central banks	2	-	-	-	-
Regional governments or local authorities	392	3	-	3	-
Public-sector agencies	236	41	2	35	-
Multilateral development banks	-	-	-	-	-
International organizations	-	-	-	-	-
Banks	30 936	919	913	1	-
Corporates	6 003	5 529	2 575	2 745	-
of which SMEs	1 396	94	19	53	-
Retail business	7 488	1 123	160	303	-
of which SMEs	1 547	167	24	0	-
Secured by real estate	-	5 162	5 162		-
of which SMEs	-	135	135		-
Exposures in default	98	53	33	12	-
Items exposed to a particularly high risk	-	-	-	-	-
Covered bonds	-	-	-	-	-
Risk exposure to banks and corporates with a short-term credit rating	0	-	-	-	-
Undertakings for collective investment	2	-	-	-	-
Equity exposures	414	-	-	-	-
Other items	36	-	-	-	-
Total amount under the Standardized Approach	**45 609**	**12 830**	**8 846**	**3 099**	**-**
of which credits*)	40 841	13 485	8 803	1 940	-
of which debt securities*)	216	9	8		-
of which off-balance-sheet exposures*)	114	61	33	12	-
Total	**204 843**	**70 282**	**52 536**	**7 525**	**-**
of which credits*)	142 898	67 763	43 433	5 290	-
of which debt securities*)	28 475	10 112	8 387	138	-
of which off-balance-sheet exposures*)	650	349	129	89	-

Figure 36: EU CR3 – Credit risk mitigation techniques – overview (Article 453 (f) and (g) CRR).

*) figures in accordance with FINREP

6.4 Credit risk mitigation techniques under the standard approach

The following table shows exposures to be reported before and after credit conversion factor and credit risk mitigation as well as RWA and RWA density.
RWA density is the ratio of risk weighted assets to exposures after taking into account credit conversion factors and credit risk mitigation.

EUR million	Exposures before credit conversion factor and credit risk mitigation		Exposures post credit conversion factor and credit risk mitigation		RWAs and RWA density	
Exposure class	On-balance-sheet amount	Off-balance-sheet amount	On-balance-sheet amount	Off-balance-sheet amount	RWAs	RWA density as %
Central governments or central banks	2		274	1	0	-
Regional governments or local authorities	231	164	1 301	5	0	0.03
Public-sector agencies	248	29	208	0	42	20.19
Multilateral development banks	-	-	0	0	-	-
International organizations	-	-	-	-	-	-
Banks	29 276	2 579	29 130	1 217	849	2.80
Corporates	10 260	1 272	6 650	304	5 819	83.67
Retail business	5 399	3 213	4 952	211	3 621	70.13
Secured by real estate	5 153	9	5 153	4	1 813	35.16
Exposures in default	145	5	141	1	184	129.67
Exposures associated with particularly high risk	-	-	-	-	-	-
Covered bonds	-	-	-	-	-	-
Institutions and corporates with a short-term credit assessment	-	0	-	0	0	150.00
Undertakings for collective investment	2	-	2	-	0	22.00
Equity investments	414	-	414	-	957	230.89
Other items	36	-	36	-	32	89.82
Total	**51 167**	**7 272**	**48 260**	**1 744**	**13 318**	**26.63**

Figure 37: EU CR4 – Standard approach – credit risk and impact of credit risk mitigation (Article 444 (e) CRR).

6.5 Credit risk mitigation techniques under IRB.

The following section shows credit risk exposures reported under the IRB approach, excluding counterparty credit risks, from the point of view of various aspects of credit risk mitigation techniques. The following table shows IRB credit risk exposures by exposure class and PD ranges set by the regulator.

EUR million Exposure class/PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF in %	EAD post CRM and post CCF	Average PD in %	Number of of obligors
Central governments and central banks						
0.00 to <0.15	51 932	4 204	74.15	58 294	0.00	2 173
0.15 to <0.25	-	-	-	-	-	-
0.25 to <0.50	-	-	-	-	-	-
0.50 to <0.75	68	-	-	68	0.59	1
0.75 to <2.50	85	17	49.39	93	1.38	3
2.50 to <10.00	66	2	50.00	6	6.58	4
10.00 to <100.00	4	1	50.00	2	18.16	4
100.00 (Default)	-	-	-	-	-	-
Sub-total	**52 157**	**4 224**	**74.04**	**58 464**	**0.01**	**2,185**
Banks						
0.00 to <0.15	31 058	944	49.51	31 540	0.06	278
0.15 to <0.25	2 715	270	37.31	2 772	0.17	41
0.25 to <0.50	652	57	49.75	680	0.30	37
0.50 to <0.75	166	18	47.81	175	0.59	23
0.75 to <2.50	459	36	44.38	475	1.33	29
2.50 to <10.00	8	5	16.79	8	2.96	7
10.00 to <100.00	0	4	20.00	1	15.00	1
100.00 (Default)	1	-	-	1	100.00	1
Sub-total	**35 058**	**1 333**	**46.69**	**35 653**	**0.10**	**417**
Corporates – SMEs						
0.00 to <0.15	2 473	1 166	22.77	2 628	0.07	2 226
0.15 to <0.25	514	300	24.90	581	0.18	829
0.25 to <0.50	1 401	830	26.08	1 594	0.34	2 015
0.50 to <0.75	525	273	15.44	543	0.62	1 008
0.75 to <2.50	1 091	542	32.99	1 163	1.34	2 118
2.50 to <10.00	367	131	46.63	336	4.55	599
10.00 to <100.00	54	16	42.82	41	17.83	175
100.00 (Default)	235	18	61.89	237	100.00	318
Sub-total	**6 661**	**3 275**	**26.15**	**7 122**	**4.03**	**9 288**

Figure 38: EU CR6 – IRB approach – Credit risk exposures by exposure class and PD range (Article 452 (e) to (g) CRR).

Average LGD in %	Average maturity	RWAs	RWA density in %	Expected loss (EL)	Value adjustments and provisions
42.70	870	1 111	1.91	1	0
-	-	-	-	-	-
-	-	-	-	-	-
45.00	900	54	79.41	0	
45.00	900	104	111.41	1	0
45.00	900	11	174.86	0	0
45.00	900	5	258.14	0	0
-	-	-	-	-	-
42.70	**870**	**1 286**	**2.20**	**2**	**0**
22.20	505	3 445	11.45	4	0
30.46	816	937	33.81	1	0
25.62	752	246	36.12	1	0
42.05	859	158	90.42	0	0
43.20	709	446	111.65	3	0
33.48	900	9	101.25	0	0
45.00	900	2	234.83	0	
45.00	900	0	-	0	- 1
23.28	**538**	**5 242**	**15.39**	**10**	**- 2**
38.49	900	432	16.42	1	0
41.18	900	183	31.54	0	0
40.94	900	702	44.03	2	- 1
43.53	900	342	63.02	1	- 1
43.37	900	970	83.43	7	- 3
43.40	900	392	116.42	7	- 2
39.32	900	65	159.52	3	- 1
44.73	900	0	-	106	- 74
40.88	**900**	**3 085**	**43.32**	**128**	**- 83**

Exposure class/PD range	Original on-balance-sheet gross exposures	Off-balance-sheet exposures pre-CCF	Average CCF in %	EAD post CRM and post CCF	Average PD in %	Number of of obligors
Corporates – specialized lending						
0.00 to <0.15	7 906	382	61.90	8 014	0.07	390
0.15 to <0.25	2 191	104	73.27	2 265	0.17	74
0.25 to <0.50	2 283	637	68.27	2 700	0.32	145
0.50 to <0.75	1 396	53	74.62	1 428	0.59	75
0.75 to <2.50	915	145	69.11	995	1.32	91
2.50 to <10.00	305	14	72.07	233	3.91	30
10.00 to <100.00	218	17	79.59	171	17.47	26
100.00 (Default)	81	2	75	82	100.00	21
Sub-total	**15 294**	**1 353**	**67.39**	**15 888**	**1.01**	**852**
Corporates – other						
0.00 to <0.15	27 479	19 562	44.33	36 014	0.07	2 100
0.15 to <0.25	5 391	3 391	46.19	6 809	0.17	870
0.25 to <0.50	6 021	7 571	51.22	9 456	0.32	1 639
0.50 to <0.75	1 736	1 157	41.35	2 055	0.59	570
0.75 to <2.50	2 870	1 612	55.40	3 184	1.31	1 008
2.50 to <10.00	1 059	501	58.86	719	3.52	332
10.00 to <100.00	530	104	56.41	162	17.69	207
100.00 (Default)	575	117	58.99	577	100.00	412
Sub-total	**45 660**	**34 016**	**46.77**	**58 977**	**1.28**	**7 138**
Equity investments under IRB approach						
0.00 to <0.15	26	-	-	26	0.11	2
0.15 to <0.25	-	-	-	-		
0.25 to <0.50	7	-	-	7	0.39	16
0.50 to <0.75	1	-	-	1	0.59	1
0.75 to <2.50	0	-	-	0	1.25	1
2.50 to <10.00	-	-	-	-	-	-
10.00 to <100.00	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-
Sub-total	**34**	**-**	**-**	**34**	**0.19**	**20**
Total (all portfolios)	**154 864**	**44 201**	**48.48**	**176 137**	**0.70**	**19 900**

	Average LGD in %	Average maturity	RWAs	RWA density in %	Expected loss (EL)	Value adjustments and provisions
	41.97	900	1 941	24.22	3	0
	43.48	900	929	41.02	2	- 1
	44.12	900	1 568	58.08	4	- 1
	41.73	900	1 042	72.99	4	- 1
	44.23	900	1 024	102.90	6	- 3
	41.98	900	334	143.31	4	- 1
	44.83	900	405	236.41	13	- 6
	43.44	900		-	36	- 11
	42.71	**900**	**7 243**	**45.59**	**70**	**- 23**
	38.16	798	7 461	21.03	10	- 6
	42.36	865	2 733	40.14	5	- 3
	44.11	895	5 468	57.82	13	- 7
	44.52	896	1 656	80.60	5	- 4
	44.29	900	3 380	106.17	19	- 9
	44.66	900	1 038	144.43	11	- 4
	43.44	900	400	246.84	13	- 4
	43.83	900		-	253	- 233
	40.30	**833**	**22 137**	**37.72**	**329**	**- 270**
	65.00	1 800	20	78.53	0	-
			-		-	-
	65.00	1 800	10	137.21	0	-
	65.00	1 800	1	240.76	0	-
	65.00	1 800	0	104.49	0	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	65.00	**1 800**	**32**	**94.30**	**0**	**-**
	37.89	**794**	**39 025**	**22.35**	**539**	**- 378**

The following table shows the effect on RWAs of credit derivatives used for credit risk mitigation. Since LBBW had no credit derivatives used for credit risk mitigation in 2017, both columns are identical.

EUR million Exposure class	Pre-credit derivatives RWAs	Actual RWAs
Exposures under FIRB	**41 886**	**41 886**
Central governments and central banks	3 075	3 075
Banks	5 322	5 322
Corporates – SMEs	3 297	3 297
Corporates – specialized lending	7 611	7 611
Corporates – other	22 581	22 581
Exposures under AIRB	-	-
Central governments and central banks	-	-
Banks	-	-
Corporates – SMEs	-	-
Corporates – specialized lending	-	-
Corporates – other	-	-
Retail – secured by real estate SMEs	-	-
Retail – secured by real estate non-SMEs	-	-
Retail – qualifying revolving	-	-
Retail – other SMEs	-	-
Retail – other non-SMEs	-	-
Equity investments under IRB approach	2 572	2 572
Other assets excl. loan commitments	2 198	2 198
Total	**46 655**	**46 655**

Figure 39: EU CR7 – IRB approach – Effect on the RWAs of credit derivatives used as credit mitigation techniques (Article 453 (g) CRR).

The following table shows the RWAs of risk exposures under the IRB approach as at reporting date of 31. December 2017. Since this is the first time we are required to publish this table, there is no flow statement to show yet.

EUR million	RWA amounts	Capital requirements
RWAs as at the end of the previous reporting period	-	-
Amount of risk exposures	-	-
Asset quality	-	-
Model updates	-	-
Methodology and policy	-	-
Acquisitions and disposals	-	-
Foreign exchange movements	-	-
Other	-	-
RWAs as at the end of the reporting period	**46 655**	**3 732**

Figure 40: EU CR8 – RWA flow statements of credit risks under the IRB approach (Article 438 (d) CRR and Article 92 (3) (a) CRR).

The following table shows the weighted average PD, arithmetic average PD by obligors, number of obligors at the end of the reporting period and the average default rate of the last five years, shown in line with the combined PD ranges and by exposure class.

The number of defaulted obligors in the reporting year and defaulted new obligors will not be reported this year, since this is a new requirement as per EBA Guideline.

Exposure class	PD range	External rating: Moody's	External rating: Standard and Poor's	External rating: Fitch	Weighted average PD in %	Arithmetic average PD by obligor in %	Number of obligors: End of the previous year	Number of obligors: End of the year	Defaulted obligors in the year	Of which new obligors	Average historical annual default rate in %
Central governments and central banks											
Investment grade	0.00 % - 0.10 %	Aaa - A3	AAA - A-	AAA - A	0.00	0.00	-	2 173	-	-	-
Investment grade	0.11 % - 0.48 %	Baa1 - Baa3	BBB+ - BBB-	A- - BBB	-	-	-	-	-	-	-
Speculative grade	0.49 % - 24.49 %	Ba1 - B3	BB+ - B-	BBB- - B-	1.45	8.41	-	15	-	-	1.19
Speculative grade	24.50 % - 99.99 %	Caa1 - Caa3	CCC+ - C	CCC+ - C	-	-	-	-	-	-	-
Default classes	100.00 % - 100.00 %	Ca - C	SD - D	RD - D	-	-	-	-	-	-	-
Total					**0.01**			**2 188**	-	-	
Banks											
Investment grade	0.00 % - 0.10 %	Aaa - A3	AAA - A-	AAA - A	0.06	0.06	-	228	-	-	-
Investment grade	0.11 % - 0.48 %	Baa1 - Baa3	BBB+ - BBB-	A- - BBB	0.16	0.19	-	128	-	-	0.31
Speculative grade	0.49 % - 24.49 %	Ba1 - B3	BB+ - B-	BBB- - B-	1.17	1.44	-	60	-	-	0.17
Speculative grade	24.50 % - 99.99 %	Caa1 - Caa3	CCC+ - C	CCC+ - C	-	-	-	-	-	-	-
Default classes	100.00 % - 100.00 %	Ca - C	SD - D	RD - D	100.00	100.00	-	1	-	-	-
Total					**0.10**			**417**	-	-	
Corporates – SMEs											
Investment grade	0.00 % - 0.10 %	Aaa - A3	AAA - A-	AAA - A	0.05	0.07	-	1 491	-	-	-
Investment grade	0.11 % - 0.48 %	Baa1 - Baa3	BBB+ - BBB-	A- - BBB	0.25	0.25	-	3 579	-	-	0.10
Speculative grade	0.49 % - 24.49 %	Ba1 - B3	BB+ - B-	BBB- - B-	1.84	2.14	-	3 843	-	-	1.58
Speculative grade	24.50 % - 99.99 %	Caa1 - Caa3	CCC+ - C	CCC+ - C	41.19	43.13	-	57	-	-	-
Default classes	100.00 % - 100.00 %	Ca - C	SD - D	RD - D	100.00	100.00	-	318	-	-	-
Total					**4.03**			**9 288**	-	-	
Corporates – specialized lending											
Investment grade	0.00 % - 0.10 %	Aaa - A3	AAA - A-	AAA - A	0.06	0.06	-	316	-	-	0.17
Investment grade	0.11 % - 0.48 %	Baa1 - Baa3	BBB+ - BBB-	A- - BBB	0.21	0.23	-	293	-	-	0.18
Speculative grade	0.49 % - 24.49 %	Ba1 - B3	BB+ - B-	BBB- - B-	2.14	3.35	-	222	-	-	3.13
Speculative grade	24.50 % - 99.99 %	Caa1 - Caa3	CCC+ - C	CCC+ - C	-	-	-	-	-	-	-
Default classes	100.00 % - 100.00 %	Ca - C	SD - D	RD - D	100.00	100.00	-	21	-	-	-
Total					**1.01**			**852**	-	-	
Corporates – purchased corporate receivables											
Investment grade	0.00 % - 0.10 %	Aaa - A3	AAA - A-	AAA - A	-	-	-	-	-	-	-
Investment grade	0.11 % - 0.48 %	Baa1 - Baa3	BBB+ - BBB-	A- - BBB	-	-	-	-	-	-	-
Speculative grade	0.49 % - 24.49 %	Ba1 - B3	BB+ - B-	BBB- - B-	-	-	-	-	-	-	-
Speculative grade	24.50 % - 99.99 %	Caa1 - Caa3	CCC+ - C	CCC+ - C	-	-	-	-	-	-	-
Default classes	100.00 % - 100.00 %	Ca - C	SD - D	RD - D	-	-	-	-	-	-	-
Total					-			-	-	-	
Corporates – other											
Investment grade	0.00 % - 0.10 %	Aaa - A3	AAA - A-	AAA - A	0.06	0.07	-	1 348	-	-	0.09
Investment grade	0.11 % - 0.48 %	Baa1 - Baa3	BBB+ - BBB-	A- - BBB	0.21	0.23	-	3 261	-	-	0.13
Speculative grade	0.49 % - 24.49 %	Ba1 - B3	BB+ - B-	BBB- - B-	1.75	3.14	-	2 097	-	-	1.34
Speculative grade	24.50 % - 99.99 %	Caa1 - Caa3	CCC+ - C	CCC+ - C	45.00	45.00	-	20	-	-	40.00
Default classes	100.00 % - 100.00 %	Ca - C	SD - D	RD - D	100.00	100.00	-	412	-	-	-
Total					**1.28**			**7 138**	-	-	
Equity exposures IRB approach											
Investment grade	0.00 % - 0.10 %	Aaa - A3	AAA - A-	AAA - A	0.09	0.09		1	-	-	-
Investment grade	0.11 % - 0.48 %	Baa1 - Baa3	BBB+ - BBB-	A- - BBB	0.19	0.26		17	-	-	-
Speculative grade	0.49 % - 24.49 %	Ba1 - B3	BB+ - B-	BBB- - B-	0.66	0.96		2	-	-	-
Speculative grade	24.50 % - 99.99 %	Caa1 - Caa3	CCC+ - C	CCC+ - C	-	-	-	-	-	-	-
Default classes	100.00 % - 100.00 %	Ca - C	SD - D	RD - D	-	-	-	-	-	-	-
Total					**0.19**			**20**	-	-	

Figure 41: EU CR9 – IRB approach – Backtesting of probability of default (PD) per exposure class (Article 452 (i) CRR).

7 Counterparty credit risk (Article 439 CRR).

Overview.

According to the Recitals of Regulation (EU) No. 575/2013 of the European Parliaments and of the Council of 26 June 2013 (CRR), there is a need to impose stricter prudential requirements since the financial crisis highlighted that institutions greatly underestimated the level of counterparty credit risk associated with OTC derivatives. For this reason, the G-20 Summit in September 2009 called for more derivatives to be cleared through a central counterparty and for contracts that could not be cleared centrally to be subject to higher own funds requirements.

Accordingly, in the Basel III reforms, the Basel Committee on Banking Supervision has structured the own funds requirements in respect of counterparty credit risk in such a way that derivatives cleared through central counterparties get a preferential capitalization treatment through lower own funds backing against derivatives that are not cleared centrally, which means that there is an incentive for institutions to aim for central counterparty clearance.

In addition, institutions are expected to hold additional own funds to cover the credit valuation adjustment (CVA) risk of OTC derivatives, the CVA charge.

The CRR rules therefore supplement Regulation (EU) No. 648/2012 of the European Parliament and Council of 4 July 2012 on OTC derivatives, central counterparties and trade repositories.

The CRR includes the following rules on derivative financial instruments which are relevant to LBBW:

Exposure to counterparty credit risk – regulatory measurement	▪ Derivatives are transactions referred to in Annex II CRR ▪ Derivative financial instruments are financial instruments as defined by the CRR ▪ Determination of the exposure value under Article 111 (2), Article 166 (5) and Article 271 (1) CRR ▪ Determination of the exposure value under Article 274 CRR as sum of replacement cost and potential future replacement value
Exposure to counterparty credit risk – regulatory risk reduction	▪ Use of netting agreements permitted under Article 295 CRR ▪ Recognition of risk-mitigating effects of contractual netting under Article 298 CRR ▪ Inclusion of collateral in connection with credit risk mitigation
Credit valuation adjustment risk – regulatory mmeasurement	▪ Calculation according to the standardized method (Article 384 CRR)

Figure 42: Overview of the rules on counterparty credit risk.

Counterparty credit risk.

Counterparty credit risk is the risk that the counterparty may default on amount owed in a derivative transaction as a result of no longer being able to meet its financial obligations. The amount of the counterparty credit risk depends on the exposure value at reporting date.

Regulatory definition of risk exposure value at LBBW.

According to Article 4 (1) (50) (c) CRR, "financial instruments" are derivative financial instruments within the meaning of the CRR. Accordingly, pursuant to Article 92 (3) (f) CRR, the risk weighted exposure amounts for the counterparty credit risk for transactions listed in Annex II are part of the total risk exposure amount. Annex II of the CRR includes a comprehensive list of transactions which have to be classified as derivatives. These are sub-divided into three categories, »Interest-rate contracts«, »Foreign-exchange contracts and contracts concerning gold« and »Contracts of a nature similar«. In accordance with both Article 111 (2) CRR and Article 166 (5) CRR, the exposure value of derivative instruments listed in Annex II shall be determined in accordance with the methods described in Section 3, Title II, Chapter 6 of the CCR. LBBW determines the exposure value in accordance with Article 274 CRR (mark-to-market method). Here, the exposure value is sum of current replacement costs and potential future credit exposure.

Capital allocation on the basis of economic capital.

LBBW has defined limits at the customer level for derivatives. Capital is allocated on the basis of economic capital. However, separate limits are not defined for derivatives. Limits are defined with the generally applicable processes for limiting counterparty risks (see chapter 2 section »Economic perspective (1st steering group))«.

Risk mitigation measures.

At LBBW, in accordance with Article 295 et seqq. CRR, risk mitigation measures in connection with derivative counterparty credit risks are the signing of recognized contractual netting and collateralization agreements and the use of central counterparties. In this, LBBW complies with the requirements pursuant to Articles 296 and 297 CRR, which allow for the recognition by competent authorities of the netting agreements.

The procedure for entering into and managing contractual netting and collateralization agreements for OTC derivatives is set out in the bank's internal rules, especially in the guideline on collateral and wrong-way risks[1] and in the internal credit guidelines. In the application of these agreements, LBBW aims to use standardized contracts (e.g. Deutscher Rahmenvertrag, ISDA Master Agreement) with the relevant hedging annexes. It also takes into account the rules laid down in the European Market Infrastructure Regulation, EMIR.

Wrong-way risks (WRRs) can occur with derivatives transactions when the exposure amount from the derivative is positively correlated with the likelihood of default by the counterparty. LBBW therefore seeks to take in cash collateral. An effective reduction of WWRs can also be achieved e.g. by limiting the exposure. LBBW achieves this by concluding the bulk of its OTC derivatives business through central counterparties (CCPs) or, in bilateral transactions, by using hedging arrangements which provide for low thresholds for additional margins and a daily valuation of customer portfolios.

Furthermore, derivative transactions (with the exception of credit derivatives) are entered into with savings bank customers via an intermediary procedure, In this case, all the points listed above apply. In addition, the intermediary savings bank guarantees the transaction.

Impact of potential LBBW rating downgrade on the collateral amount to be provided arising from bilaterally secured derivative positions.

In the majority of cases, the agreements entered into do not provide for any increase in collateral in the event of an LBBW rating downgrade. However, some counterparties stipulate an incremental increase in collateral in the event of a downgrade of LBBW's rating. As at 31 December 2017, the additional funding obligation amounted to just under EUR 105 million in the event of a downgrade of LBBW by at least six notches in relation to LBBW's long-term rating.

1 The guideline on collateral and wrong-way risk is binding for all relevant areas of LBBW in that it concerns the general handling of collateral in respect of counterparty credit risk. This framework is in part specified in the various department's work instructions.

Allowances for losses on loans and advances.

Credit risks of derivative transactions are included in a Credit Value Adjustment (CVA). This involves adjusting the fair value of a derivative. It reflects the risk that a derivative's positive fair value is reduced due to a deterioration of the counterparty's credit rating. This provision is applied in addition to the general rating assessment of the counterparty and covers the counterparty default risk.

Correlation between market price risks and credit risks.

Market price risks and credit or counterparty risks are pooled using economic capital under the Group-wide economic capital limit.

The economic capital of the various types of risk is aggregated taking correlations into account. The assumed correlation between market price risks and credit risks is based on a time-series analysis. It looks at any changes in value based on LBBW's current portfolio.

Quantitative disclosures.

The methods used to calculate the regulatory requirements pursuant to the CRR are shown in the following table. LBBW only uses the mark-to-market method to calculate RWA.

EUR million	Notional	Replacement cost/current market value	Potential future credit exposure	Effective expected positive exposure (EEPE)	Multiplier	EAD post CRM	RWAs
Mark-to-market method		10 485	10 119			15 327	2 477
Original Exposure Method	-					-	-
Standardized Method		-			-	-	-
IMM (for derivatives and securities financing transactions)			-	-	-	-	-
of which securities financing transactions			-	-	-	-	-
of which derivatives and long settlement transactions			-	-	-	-	-
of which from contractual cross-product netting			-	-	-	-	-
Financial collateral simple method (for securities financing transactions)						-	-
Financial collateral comprehensive method (for securities financing transactions)						-	-
VaR for securities financing transactions						-	-
Total							**2 477**

Figure 43: EU CCR1 – Analysis of counterparty credit risk by approach (Article 439 (e), (f) and (i) CRR).

The following table shows own funds requirements for the credit valuation adjustment (CVA) capital charge by approach.

EUR million	Exposure value	RWAs
Total portfolio subject to the advanced method	-	-
i) VaR component (including the 3x multiplier)		-
ii) SVaR component (including the 3x multiplier)		-
All portfolios subject to the standardized method	3 798	1 922
Based on the original exposure method	-	-
Total subject to the CVA capital charge	**3 798**	**1 922**

Figure 44: EU CCR2 – Credit Valuation Adjustment capital charge (Article 439 (e) and (f) CRR).

The following table shows the counterparty credit risk exposures reported in the CRSA by exposure class and right weight.

EUR million	Risk weight					Total	of which unrated
Exposure class	0 %	20 %	50 %	75 %	100 %		
Central governments or central banks	-	-	-	-	-	-	-
Regional governments or local authorities	12	-	-	-	-	12	12
Public-sector agencies	-	22	-	-	-	22	16
Multilateral development banks	-	-	-	-	-	-	-
International organizations	-	-	-	-	-	-	-
Banks	1 569	258	-	-	-	1 827	1 579
Corporates	-	-	-	-	220	220	218
Retail business	-	-	-	10	-	10	10
Institutions and corporates with a short-term credit assessment	-	-	-	-	-	-	-
Other items	-	-	-	-	-	-	-
Total	**1 581**	**281**	-	**10**	**220**	**2 091**	**1 836**

Figure 45: EU CCR3 – Standardized approach – counterparty credit risk exposures by regulatory portfolio and risk weight (Article 444 (e) CRR in conjunction with Article 92 (3) (a) and (f) CRR).

The following table provides all relevant parameters used for the calculation of counterparty credit risk capital requirements in the IRB approach. The presentation is by exposure class and by fixed PD ranges, as set by the regulator. The column »Number of obligors« shows the number of obligors of individual PDs listed in the table. The column »RWA density« refers to the ratio of risk weighted assets to exposures post credit conversion factors and credit risk mitigation.

EUR million Exposure class/PD range	EAD post credit risk mitigation	Average PD in %	Number of obligors	Average LGD in %	Average maturity	RWAs	RWA density in %
Central governments or central banks							
0.00 to <0.15	5 583	0.00	157	29.40	900	61	0.01
0.15 to <0.25	-	-	-	-	-	-	-
0.25 to <0.50	-	-	-	-	-	-	-
0.50 to <0.75	-	-	-	-	-	-	-
0.75 to <2.50	0	1.98	1	45.00	900	0	1.21
2.50 to <10.00	-	-	-	-	-	-	-
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	**5 583**	**0.00**	**158**	**29.40**	**900**	**61**	**0.01**
Banks							
0.00 to <0.15	4 033	0.06	147	35.48	900	973	0.24
0.15 to <0.25	426	0.17	26	31.11	900	147	0.34
0.25 to <0.50	98	0.33	15	19.67	900	29	0.30
0.50 to <0.75	8	0.59	4	43.78	900	6	0.77
0.75 to <2.50	5	1.48	5	45.00	900	6	1.24
2.50 to <10.00	2	2.96	4	45.00	900	2	1.36
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	**4 571**	**0.08**	**201**	**34.76**	**900**	**1 164**	**0.25**
Corporates - SMEs							
0.00 to <0.15	33	0.06	72	45.00	900	6	0.19
0.15 to <0.25	9	1.18	38	45.00	900	4	0.42
0.25 to <0.50	45	0.34	112	45.00	900	22	0.50
0.50 to <0.75	12	0.63	53	42.58	900	8	0.65
0.75 to <2.50	25	1.19	114	44.89	900	20	0.82
2.50 to <10.00	3	3.90	25	45.00	900	4	1.21
10.00 to <100.00	0	12.32	7	45.00	900	0	1.42
100.00 (Default)	1	100.00	12	45.00	900	0	0
Sub-total	**128**	**1.51**	**433**	**44.75**	**900**	**65**	**0.51**
Corporates - specialized financing							
0.00 to <0.15	140	0.07	74	44.26	900	33	0.24
0.15 to <0.25	27	0.17	13	45.00	900	12	0.45
0.25 to <0.50	59	0.28	23	45.00	900	32	0.55
0.50 to <0.75	32	0.59	33	45.00	900	23	0.71
0.75 to <2.50	45	1.53	16	45.00	900	47	1.03
2.50 to <10.00	1	4.38	3	45.00	900	1	1.52
10.00 to <100.00	16	19.71	9	45.00	900	41	2.52
100.00 (Default)	0	100.00	3	45.00	900	0	0
Sub-total	**320**	**1.45**	**174**	**44.92**	**900**	**190**	**0.59**
Corporates - other							
0.00 to <0.15	967	0.08	537	42.82	900	261	0.27
0.15 to <0.25	265	0.17	196	45.00	900	113	0.43
0.25 to <0.50	248	0.29	306	45.00	900	137	0.55
0.50 to <0.75	27	0.59	76	44.92	900	22	0.79
0.75 to <2.50	51	1.23	138	45.00	900	53	1.03
2.50 to <10.00	12	3.78	26	45.00	900	18	1.48
10.00 to <100.00	5	20.00	3	45.00	900	11	2.53
100.00 (Default)	0	100.00	10	45.00	900	0	0
Sub-total	**1 576**	**0.29**	**1 292**	**43.66**	**900**	**616**	**0.39**
Equity IRB							
0.00 to <0.15	-	-	-	-	-	-	-
0.15 to <0.25	-	-	-	-	-	-	-
0.25 to <0.50	-	-	-	-	-	-	-
0.50 to <0.75	-	-	-	-	-	-	-
0.75 to <2.50	-	-	-	-	-	-	-
2.50 to <10.00	-	-	-	-	-	-	-
10.00 to <100.00	-	-	-	-	-	-	-
100.00 (Default)	-	-	-	-	-	-	-
Sub-total	-	-	-	-	-	-	-
Total (all portfolios)		**12 498**	**0.17**	**2258**	**34.01**	**900**	**2 096**

Figure 46: EU CCR4 – IRB approach – counterparty credit risk exposures by portfolio and PD range (Article 452 (e) CRR and Article 92 (3) (a) and (f) CRR).

The following table shows the impact of netting and collateral held. At LBBW, securities financing transactions are not treated in accordance with counterparty credit risk rules, but rather as secured credit business in the context of the financial collateral comprehensive method.

EUR million	Gross positive fair value or net carrying amount	Netting benefits	Netted current credit exposure	Collateral held	Net credit exposure
Derivatives	31 405	20 920	10 485	4 912	5 573
Securities financing transactions	-	-	-	-	-
Cross-product netting	-	-	-	-	-
Total	**31 405**	**20 920**	**10 485**	**4 912**	**5 573**

Figure 47: EU CCR5-A – Impact of netting and collateral held on exposure values (Article 439 (e) CRR).

The following table gives a breakdown of all types of collateral posted or received by banks to reduce counterparty credit risk.

»Segregated« means collateral that is held in a bankruptcy-remote manner within the meaning of Article 300 CRR. »Unsegregated« refers to collateral that is not held in a bankruptcy-remote manner.

EUR million	Collateral used in derivative transactions				Collateral used in securities financing transactions	
	Fair value of collateral received		Fair value of posted collateral			
	Segregated	Unsegregated	Segregated	Unsegregated	Fair value of collateral received	Fair value of posted collateral
Derivatives	-	4 881	601	5 029	-	-
Securities financing transactions	-	-	-	-	-	-
Cross-product netting	-	-	-	-	-	-
Total	-	**4 881**	**601**	**5 029**	-	-

Figure 48: EU CCR5-B – Composition of collateral for exposures to counterparty credit risk.

The following table sets out the notional amounts and fair values of the credit derivatives bought and sold for the Bank's own credit portfolio and for the trading portfolio by type of credit derivative (based on notional value). Credit derivatives from brokering activities were not used by LBBW in 2017.

EUR million	Credit derivative hedges		Other credit derivatives
	Protection bought	Protection sold	
Notionals			
Single-name credit default swaps	-	-	7 914
Index credit default swaps	-	-	2 851
Total return swaps	-	-	486
Other credit derivatives	-	-	-
Other credit derivatives	-	-	-
Total notionals	-	-	**11 251**
Fair values	-	-	**342**
Positive fair value (asset)	-	-	**128**
Negative fair value (liability)	-	-	**214**

Figure 49: EU CCR6 – Credit derivatives exposures (Article 439 (g) and (h) CRR).

The above table (EU CCR6) only differentiates between protection bought and protection sold in the case of credit derivative hedges LBBW interprets the credit derivatives to be shown in these columns as credit derivatives used for hedging purposes for credit risks in the banking book. As at 31 December 2017, LBBW had no such transactions in its portfolio.

In the case of credit derivatives bought and sold for the purpose of the trading book (Other credit derivatives column), the exposure from protection bought and protection sold should be given as a total. In contrast to last year, the exposure from credit-linked notes is no longer required in the table. Fair values are shown separately as positive and negative values. There is no distinction between type of credit derivative. The reduction in the notional value of the credit default swaps reflects maturities, early terminations and portfolio compression. There were fewer new outflows. The holdings of total return swaps declined on the back of the liquidation of transactions.

Since LBBW only uses the mark-to-market method, there is no need for Table EU CCR7 RWA flow statements of counterparty credit risk exposures under the Internal Model Method (IMM).

The following table shows exposures to central counterparties (CCPs), broken down by qualifying and non-qualifying CCPs and by exposure class.

»Qualifying« means that the CCP meets the requirements outlined in Article (4) (1) (88) CRR for the settlement of derivative transactions.

EUR million	EAD post CRM	RWAs
Exposures to qualifying CCPs (total)		**234**
Exposures for trades at qualifying CCPs (excl. initial margin and default fund contributions); of which	4 886	98
i) OTC derivatives	3 216	64
ii) exchange-traded derivatives	1 670	33
iii) securities financing transactions	-	-
iv) netting sets where cross-product netting has been approved	-	-
Segregated initial margin	601	
Non-segregated initial margin	27	1
Prefunded default fund contributions	156	136
Alternative calculation of own funds requirements for exposures		-
Exposures to non-qualifying CCPs (total)		
Exposures for trades at non-qualifying CCPs (excl. initial margin and default fund contributions); of which	-	-
i) OTC derivatives	-	-
ii) exchange-traded derivatives	-	-
iii) securities financing transactions	-	-
iv) netting sets where cross-product netting has been approved	-	-
Segregated initial margin	-	
Non-segregated initial margin	-	-
Prefunded default fund contributions	-	-
Unfunded default fund contributions	-	-

Figure 50: EU CCR 8 – Exposures to central counterparties (Article 439 (e) and (f) CRR).

8 Market risk (Article 445 and 455 CRR).

8.1 Definition.

LBBW defines market price risks as potential losses resulting from adverse changes in market prices or factors influencing prices. Market price risks are split into the categories equity, interest rates and exchange rates/commodities. The following types of market price risk arise from LBBW's business activities.

Equity risk.

The equity risk reflects equity and index price movements and where applicable also equity and index volatility.

Interest rate risk.

The interest rate risk is based on changes in market interest rates, yield spreads, credit spreads or even interest rate volatility. This also includes interest rate risk in the banking book (IRRBB).

Currency/commodity risk.

In the LBBW Group, the currency/commodity risks are summarized and reported under foreign exchange risk. The currency risk is based on the exchange rate trend. The commodity risk relates to changes in the price of precious metals and commodities.

Market price risk management.

Risk measurement	▪ Internal risk model approved by the regulatory authority ▪ Daily value-at-risk measurement ▪ Stress tests, calculation of stress VaR, backtesting analysis ▪ Sensitivities ▪ Monitoring of risk concentration
Risk monitoring and reporting	▪ Monitoring and observance of the limits by persons who are responsible for the portfolios in Group Risk Control ▪ Daily, weekly and monthly reporting
Risk management	▪ Specifications on the basis of market price risk strategy and portfolio descriptions ▪ VaR limit down to portfolio level ▪ Loss limit per portfolio via a loss-warning trigger ▪ Limiting of sensitivities

Figure 51: Management of market price risks.

8.2 Market risks in the standardized approach.

LBBW calculates the capital requirements for market price risks for general interest rate and equity risk including option price risks using the Internal Model Method. Specific risks along with currency and commodity risks are calculated using the Standardized Approach.

EUR million	RWAs	Capital requirements
Outright products		
Interest rate risk (general and specific)	2 874	230
Equity risk (general and specific)	101	8
Currency risk	377	30
Commodity risk	32	3
Options		
Simplified approach	-	-
Delta-plus method	18	1
Scenario approach	0	0
Securitization (specific risk)	-	-
Total	**3 402**	**272**

Figure 52: EU MR1 – Market risk under the standardized approach (Article 445 CRR).

8.3 Market risks under the Internal Model Method.

Market price risk management.

LBBW's market price risk strategy documents the strategic goals for the specific types of risk. It describes the activities exposed to market price risks and the underlying strategies for all of LBBW's relevant organizational units, branches and subsidiaries. Moreover, the market price risk strategy addresses the deliberate and controlled approach to these risks to strategically leverage the opportunities which they hold. Accordingly, it fleshes out the Bank's business strategy with regard to market price risks. It is duly specified in greater detail in organizational policies (e.g. work instructions, manuals, portfolio profiles). In addition, the guidelines on risk management form the key strategic principles and rules of conduct for evaluating risks and opportunities within the LBBW Group and thus form the basis for a uniform, company-wide understanding of corporate objectives in connection with risk management. Risk management includes all measures used for a systematic recognition, analysis, valuation, monitoring, control and avoidance/mitigation of risk.

In the case of market price risks, risk monitoring and reporting is conducted by the Market Risk Control unit which is part of Group Risk Control. Group Risk Control operates independently of trading, thus ensuring a separation of functions. Group Risk Control is answerable direct to the member of the Board of Managing Directors with responsibility for risk management.

LBBW's market risk positions are marked to the market on a daily basis by Group Risk Control. This is used as a basis for calculating business performance. Market price risks are quantified using a value-at-risk approach, which is supplemented by sensitivity measurements and stress tests. The risk ratios are addressed by means of corresponding portfolio limits which are used to cap the market price risks.

The integrated bank management is supplemented by stressed value-at-risk calculations. This is based on an observation period which covers a significant financial stress period. This observation period is determined once every quarter for the CRR portfolio relevant for prudential disclosures containing all the trading book positions of LBBW (Bank) excluding investment funds. In addition, the relevant observation period for stressed value-at-risk is calculated on a weekly basis. This is also calculated for the LBBW Group. This second calculation simulates the increase in risk under stress during the relevant period for the Group. This figure is also incorporated in the scenarios applying across all risk categories and is thus relevant for risk-bearing capacity.

Inclusion in the trading book.

The Internal Criteria of Landesbank Baden-Württemberg (including foreign branches) are the central document for the allocating positions to the trading book for the purpose of defining the trading book in accordance with Articles 102 et seqq. CRR. This document describes the general allocation criterion as well as specific details with respect to the business portfolio of LBBW (Bank), the rules for shifts between the banking book and the trading book as well as the technical methods for determining the positions. The Internal Criteria also include the following rules.

Pursuant to Article 4 (1) (86) CRR, LBBW's trading book consists of »all positions in financial instruments and commodities held by an institution either with trading intent, or in order to hedge positions held with trading intent«. According to Article 4 (1) (86) CRR, the decisive criterion for the allocation of a financial instrument or a commodity to the trading book is the trading intent or the hedging of other positions held with trading intent. This is expressed as the intent to generate income from own trading, i.e. to leverage differences between buying and selling prices or from other price, value or interest rate variations in the short term or to sell the position at short notice. Trading intent as per Article 102 (2) CRR can be demonstrated clearly based on LBBW's market-price/liquidity risk strategy along with the clearly drawn up rules on the active management and monitoring of the positions held in the trading book.

The trading strategy also includes the expected holding period (Article 103 (a) CRR). At LBBW, this period is up to one year. If positions allocated to the trading book are not resold or closed within this period, the intended purpose and the future allocation to the trading or banking book are reviewed based on the holding period concepts defined internally. In this review, trading intent can be evidenced both based on trading turnover (changes in holdings of a specific security) – which should be the main focus of attention when monitoring the holding period of securities – and on changes in sensitivities.

Apart from a review of the holding period, tradability is also reviewed. Under normal market conditions, the criteria set out in LBBW's holding-period concept shall be factored in to check the tradability and hedgeability of the positions' market risk in the trading book. These criteria refer to individual product classes respectively. The middle office of the respective trading areas is responsible for checking with the appropriate trader the tradability and hedgeability of each and every position which has exceeded the permitted holding period based on technical evaluations and taking into account the criteria mentioned earlier. Apart from answering the question of whether the position is still tradable and hedgeable, the staff in charge are required to provide detailed justification of any remaining trading intent based on an assessment of the market and of tradability and hedgeability. Monitoring the holding period and marketability takes place at the set dates, namely as per the last trading days of April and October, respectively.

Reallocation decisions in relation to individual positions which have to be switched from the trading into the banking book because the holding period has been exceeded or for any other reason defined in the Internal Criteria shall be taken in accordance with set procedures and documented in writing.

In the case of derivatives positions, the review for an allocation to the trading book is based on an analysis of whether the portfolio is being actively managed and not at individual transaction level. This process arises because it involves OTC contracts which are generally held until final maturity. The active management of a portfolio is checked based on changes in sensitivities.

Internal model in accordance with CRR.

LBBW calculates value-at-risk (VaR) and stressed VaR from market price risks with a confidence level of 99 % and a ten-day holding period by using the square root of time for scaling up to ten days. A parameter of 95 % and one-day holding period are used for bank internal management. Both VaR

and stressed VaR are calculated using a procedure based on a Monte Carlo simulation. In most cases, the simulation enables LBBW not only to simply approximate market-induced value fluctuations but to measure them fully, even for complex transactions. Historical time series for the preceding 250 days are weighted equally in covariance estimates. The aforementioned stressed VaR is also used to calculate the capital requirement.

The relevant stressed VaR period is currently the period from 31 August 2008 up to 31 August 2009 and includes the worst-case period for LBBW. LBBW's market price risk model is also uniformly used for all sub-portfolios and for the Group's subsidiaries that are integrated in Group-wide standardized management based on the value-at-risk risk indicator. At present, none of LBBW's subsidiaries are classified as relevant in terms of market price risk. In the risk-calculation simulation, the deviation of the risk factors is calculated using the following models: equity prices, FX rates and interest-rate volatility using log yields, CDS spreads and interest rates using absolute yields and equity/FX volatilities using relative yields.

Trading portfolios and the strategic interest rate position of the banking book can be affected by potentially detrimental developments in market interest rates. In addition to parallel shifts and turns in the interest curve, basic risks arising from movements in the relevant fixed-income markets relative to each other are also included in risk calculations.

Credit spread risks from securities are measured on the basis of the general and specific issuer risk. This risk category includes trading and banking book transactions that are sensitive to creditworthiness. Apart from securities and debt securities, these include money-market transactions in the trading and banking books as well as loans on the commercial side where the obligors have visible credit spreads. For the purpose of measuring general risk, these instruments are allocated to rating- and sector-dependent curves. In addition, the specific issuer risk for securities is calculated by reference to the spread (and spread volatility) of individual counterparties.

Reference borrowers are allocated to CDS sector curves for credit spread risks from credit derivatives. The allocated CDS sector curves are deflected for the general interest rate risk and the residual maturities for the specific risk.

Credit spread risks account for a substantial share of LBBW's market price risk. Equity risks, along with currency and commodity risks, are less significant for LBBW than interest rate and spread risks. Commodity risks also include risks from precious metals and notes and coins portfolios, which LBBW holds to only a limited degree.

LBBW's internal risk model has been approved by the competent authority for general interest rate and equity risks including option price risks in the form of volatility risks. The internal risk model for capital requirements does not include any specific risks. The CRR portfolio forms the basis for calculating own funds requirements.

Backtesting and validation.

LBBW's market risk model is subject to an extensive validation program in which potential model risks in the stochastics of the market factors (including distribution model, risk factor selection and mapping), in the implemented measurement models and in the relevant market data (especially market data calibrated within the Bank) are identified and their materiality assessed using customized validation analyses. The validation analyses are performed by the Risk Model Validation organizational unit within Group Risk Control, which is independent of model development. The analyses are guided by the materiality of the model risks and performed at regular intervals (at least twice yearly) and on an ad hoc basis in the event of material structural changes occurring in the model design, on the market or in the portfolio composition.

Particular importance is attached to the backtesting analysis within the validation program. This statistical backward comparison of the actual changes to the portfolio not only focuses on the VaR forecast using a binomial test[1], but is also based on the entire distribution forecast. According to regulatory requirements. it is based on the one hand on changes in portfolio value excluding new business and intraday trades, net interest income and commissions and fees (so-called Clean P/L) and on the other on changes in portfolio value excluding commissions and fees (so-called Dirty P/L), which are derived directly from the economic P/L.

If the backtesting or validation analyses indicate material model risks, they are made transparent to all parties integrated in the market risk management process (model developers, model users (operational market risk controlling) and recipients of the model results (Risk Committee, trading)) so that the necessary model optimization measures can be initiated efficiently. Model optimization measures are carried out according to the model change policy and communicated to the regulatory authorities.

The CRR portfolio, which comprises trading transactions whose own funds requirements for general equity and interest rate risks takes place via the internal risk model, shows one outlier for the Clean P/L on 21 April 2017. The overshoot amounted to EUR 3.946 million. It was brought about by a strong market movement in the euro yield curve after the first round of the presidential election in France. On the basis of the Dirty P/L four outliers were recorded for the CRR portfolio in 2017. The first outlier occurred on 29 August 2017 with an overshoot of EUR 1.152 million, and was caused by a strong fluctuation in the EUR/USD exchange rate. The second outlier was on 30 August 2017. In this case, the overshoot amounted to EUR 1.171 million. Once again, it reflected a sharp fluctuation in the EUR/USD exchange rate and a change in the credit valuation adjustment which is calculated monthly. The next overshoot is dated 8 December 2017 and amounted to EUR 4.582 million; there was a further outlier on 28 December amounting to EUR 4.986 million. Both outliers in December reflect changes in the valuation adjustments.

1 Regulatory Backtesting, EU No. 575/2013, Article 366.

Clean backtesting CRR portfolio for the period 29 Dec. 2016 – 29 Dec. 2011 in EUR million.
VaR parameters: 99 % confidence level, 1-day holding period

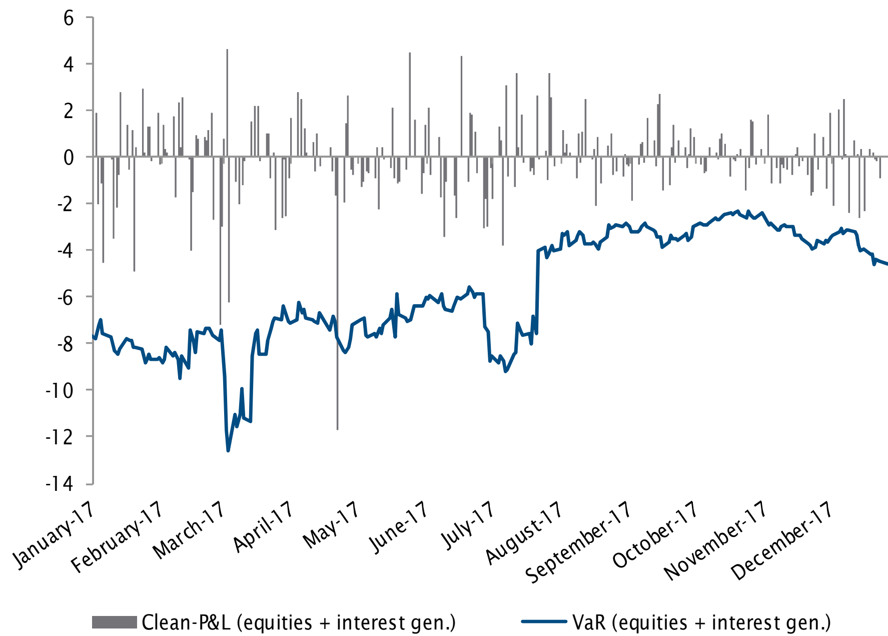

Figure 53: Value at risk of the CRR portfolio under the Internal Model Method and hypothetical buy-and-hold losses (Article 455 (g) CRR).

Dirty backtesting CRR portfolio for the period 29 Dec. 2016 – 29 Dec. 2017 in EUR million.
VaR parameters: 99 % confidence level, 1-day holding period

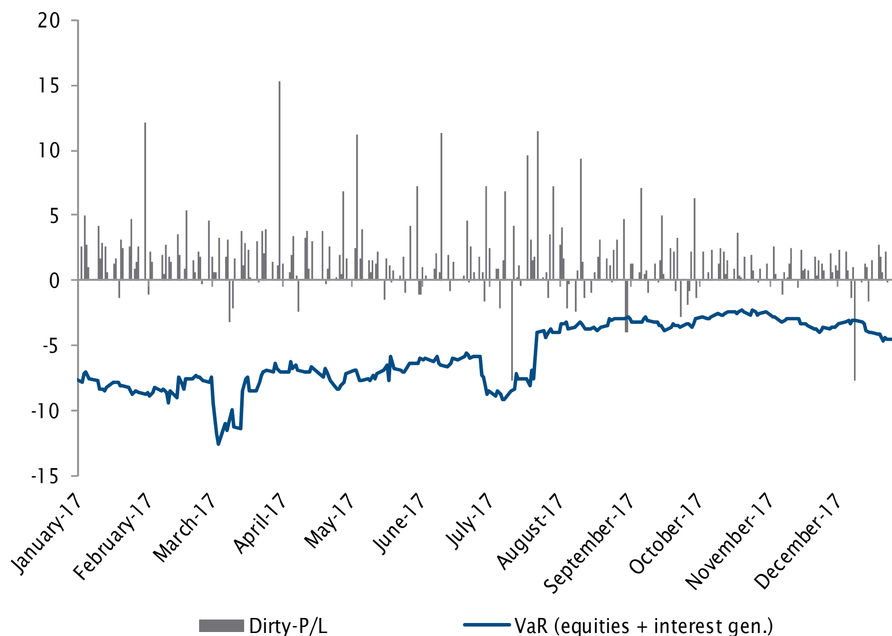

Figure 54: Value at risk of the CRR portfolio under the Internal Model Method and actual portfolio changes excluding commissions and fees (Article 455 (g) CRR).

Stress tests.

Stress testing is used to examine how the value of the portfolio changes under extreme market conditions. LBBW's risk system includes historical and synthetic (self-defined) scenarios. Synthetic scenarios are based mostly on selected market factor groups such as individual and combined interest shifts. Historical scenarios were generated from the data analyses of market shocks. All scenarios serve the purpose of mapping extreme events in the financial markets on a forward-looking basis in cases in which these are not specifically included in the VaR as historical input. These scenarios are applied to the portfolio on a weekly basis together with the pre-defined market data changes and any changes in the present values reported as stress test results.

At present, a scenario which simulated an increase in the credit spreads of banks by 150 basis points is the scenario with the greatest impact on LBBW's trading book.

The shifted market factors for the most significant stress scenarios for LBBW's CRR portfolio as at 31 December 2017 are shown in the following table.

Increase in credit spreads banks EUR A	
Increase in credit spreads banks EUR A	A + 150
Interest rate, equity, FX vola down 50 %	
Vola down 50 %	Vola - 50 %

Figure 55: Stress test scenarios (Article 455 (a) (iii) CRR).

Measurement of trading book positions.

LBBW measures its trading book positions at market prices which are obtained on a daily basis from sources independent of trading and are especially quality-assured or which are supplied by the trading units and examined by Risk Control. Risk Control also applies consistent standards and processes for performing an independent price verification (IPV) process, in which trading prices are monitored on an independent basis.

The providers of market data used include Reuters, Bloomberg and MarkIT. If the data is not directly observable in the market, LBBW uses measurement models which incorporate parameters derived from market prices. In addition, model valuation adjustments are made in the light of the principle of caution.

Adjustments in accordance with Article 105 CRR (prudent valuation).

In addition, LBBW makes deductions from its regulatory own funds to allow for model risks, settlement costs, market price uncertainty, unearned credit risk premiums, operational risks, less liquid and concentration positions as well as administration expenses, cash investment and borrowing costs. These adjustments are calculated for all positions measured at fair value and deducted from common equity Tier 1. The prudent valuations are regularly reviewed in a procedure documented in writing in LBBW's rules.

Further disclosures on the use of non-observable parameters can be found in the »Notes on financial instruments« in the annual report, p. 205 et seqq.

The following table shows the components relevant for the calculation of own funds requirements for market risks that are determined using the Internal Model Method.

EUR million	RWAs	Capital requirements
VaR (higher of values a) and b))	**436**	**35**
a) Previous day's VaR (Article 365 (1) CRR (VaRt-1))	181	14
b) Average of the daily VaR (Article 365 (1) CRR) on each of the preceding 60 business days (VaRavg) x multiplication factor (mc) in accordance with Article 366 CRR	436	35
SVaR (higher of values a) and b))	**1 770**	**142**
a) Latest sVaR (Article 365(2) CRR (sVaRt-1))	661	53
b) Average of the sVaR (Article 365(2) CRR) during the preceding 60 business days	1 770	142
IRC (higher of values a and b)	-	-
a) Most recent IRC value (incremental default and migration risks calculated in accordance with Article 370 and Article 371 CRR)	-	-
b) Average of the IRC number over the preceding 12 weeks	-	-
Internal model for correlation trading portfolio (higher of values a), b) and c))	-	-
a) Most recent risk number for the correlation trading portfolio (Article 377 CRR)	-	-
b) Average of the risk number for the correlation trading portfolio over the preceding 12 weeks	-	-
c) 8 % of the own funds requirement in the standardized approach on the most recent risk number for the correlation trading portfolio (Article 338 (4) CRR)	-	-
Other		
Total	**2 206**	**176**

Figure 56: EU MR2-A – Market risk under the Internal Model Method (Article 455 (e) CRR)

The following table shows the holdings of VaR and of the stressed VaR as at 31 December 2017.

Since this is the first time we are required to publish this table, there is no flow statement to show yet.

EUR million	VaR	sVaR	IRC	Comprehensive risk measure	Other	Total RWAs	Total capital requirements
RWAs at previous quarter-end	-	-	-	-	-	-	-
Regulatory adjustments	-	-	-	-	-	-	-
RWA at the previous quarter-end (end of the day)	-	-	-	-	-	-	-
Movement in risk levels	-	-	-	-	-	-	-
Model updates/ changes	-	-	-	-	-	-	-
Methodology and policy	-	-	-	-	-	-	-
Acquisitions and disposals	-	-	-	-	-	-	-
Foreign exchange movements	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-
RWAs at the end of the reporting period (end of the day)	-	-	-	-	-	-	-
Regulatory adjustments	-	-	-	-	-	-	-
RWAs as at the end of the reporting period	436	1 770				2 206	176

Figure 57: EU MR2-B – RWA flow statement of market risk exposures under the Internal Model Method (IMM) (Article 455 (e) CRR)

The following table shows the normal VaR and stressed VaR for the trading book (99 %/10 days) at institution level.

The VaR has fallen slightly in relation to 2016; the stressed VaR shows a slightly more pronounced decline.

EUR million	31 December 2017
VaR (10 days 99 %)	
Maximum value	30
Average value	16
Minimum value	9
Value at the end of the reporting period	16
sVaR (10 day 99 %)	
Maximum value	83
Average value	64
Minimum value	40
Value at the end of the reporting period	53
IRC (99.9 %)	
Maximum value	-
Average value	-
Minimum value	-
Value at the end of the reporting period	-
Comprehensive risk capital charge (99.9 %)	
Maximum value	-
Average value	-
Minimum value	-
Value at the end of the reporting period	-

Figure 58: EU MR3 – IMA values for trading portfolios (Article 455 (d) CRR)

9 Exposure to interest rate risk on positions not included in the trading book. (Article 448 CRR).

As a matter of principle, all new customer exposures are funded on a matching maturities basis with minimum delay, based on their legal maturities. The Group's Board of Managing Directors accepts further strategic positions in the light of current market conditions on the basis of this business policy. These items include risks in the form of cash flow incongruities (structural risks), risks from leveraging interest rate gaps between individual market segments (basic risk) and options risks from financial transactions entered into.

9.1 Quantification.

All relevant interest-bearing and/or interest-sensitive positions in the banking book are included in measurements in accordance with LBBW's own procedures for measuring interest rate risks. The daily valuation is on an individual-transaction and portfolio basis respectively.

For variable-rate transactions with private and corporate customers (particularly deposits), records made on grounds of conditions or conduct are taken into account by using the deposit base theory in conjunction with the concept of moving averages.

Interest rate risks are measured daily using a Monte Carlo simulation. Here, changes in the value of the banking book as a whole or even for individual portfolios are specified for each currency using randomly selected interest rate scenarios. Together with the confidence level, the distribution arising from this serves to determine the VaR (confidence level of 95 % and holding period of one trading day). The VaR identified on this basis expresses the potential loss which with 95 % probability will not be exceeded within a trading day. The calculated risks of the banking book are taken into account in risk-bearing capacity on the basis of the relevant parameterization.

In addition to daily reporting, further stress and worst-case scenarios are calculated on a weekly basis and made available for further analysis. All scenarios help to show the future effects of extreme events on the financial markets which are not sufficiently presented in the VaR normal impact event on the respective book. Extreme historic market fluctuations and self-defined scenarios are used in this respect.

9.2 Interest rate risks in the banking book.

Under regulatory requirements, the effect of an interest-rate shock on the economic value must be disclosed in the banking book. This involves a parallel shift in the yield curve by + 200 basis points (rising interest) upwards and by - 200 basis points (falling interest) downwards. The interest rate of 0 % constitutes a floor. Due to the fact that the EUR interest rate level remains very low and due to the existing floor, the imbalance between a positive and a negative interest shock persists. The rise against the previous year reflects an increase in interest-sensitive positions.

The following table shows the changes in net present value, broken down into the main currencies.

EUR million	Changes in present value due to interest rate shock	
Currency	Positive interest rate shock + 200 basis points	Negative interest rate shock - 200 basis points
CHF	- 5	0
EUR	- 1 169	187
GBP	- 45	14
JPY	0	0
USD	2	- 40
Other	- 1	0
Total [1]	**- 1 260**	**96**
Total previous year	**- 764**	**- 215**

Figure 59: Interest rate risks in the banking book (Article 448 (b) CRR).

1 Calculated in accordance with BaFin Circular 11/2011.

10 Exposure to securitization positions (Article 449 CRR).

10.1 Securitization positions in the banking book.

LBBW holds securitization positions in its function as an investor and a sponsor.

Investor positions.

In connection with efforts to restructure the Bank, credit substitute business, a material part of which entailed securitization positions, has very largely been run off. LBBW invested in two new securitization positions in the 2017 reporting year. One was aircraft finance of EUR 74 million and vehicle leasing contracts and residual values of EUR 315 million vis-à-vis retail and corporate customers. The second involved an existing securitization transaction which also securitizes leasing contracts and residual values; this transaction was increased by EUR 110 million. There were no other securitization investments in 2017.

Investor position risk is regularly monitored on the basis of the trustee reports.

External ratings are generally available for investor positions, which lead to the application of the ratings-based approach (IRBA). Independently of the type of securitized exposures and securitization positions, LBBW takes into account the ratings of the recognized rating agencies Standard & Poor's Ratings Services, Moody's Investors Service or Fitch Ratings Ltd. The securitization positions mostly have a good to first-class rating.

Sponsor positions.

LBBW acts as a sponsor and/or arranger of securitization programs as part of customer transactions, offering customers innovative, capital-market-oriented financing alternatives.

In its role as sponsor and/or arranger of customer transactions, LBBW continued to support upper SMEs with new financing solutions in 2017. The aim is to harness cross-selling potential with existing customers and to use this form of finance selectively for attracting new customers that meet the target customer definition formulated for corporate customer business.

As part of its securitization programs, LBBW provides the appropriate »Weinberg Funding Ltd., Jersey« and »Weinberg Capital DAC, Dublin« special-purpose vehicles with liquidity facilities as well as swap lines if necessary in addition to its role as a service provider. The liquidity lines are carried in the banking book. LBBW also acts as collateral trustee for these SPVs.

In its function as service provider, LBBW is exclusively responsible for the structuring, administration and coordination of customer transactions. It also manages the bank accounts which the SPVs hold at LBBW. Furthermore, LBBW acts as a dealer for the euro commercial paper of the Weinberg program.

The liquidity risks accepted in connection with pledges for liquidity facilities are recorded on a quarterly basis by LBBW's Liquidity Controlling. Corresponding work instructions have been issued to mitigate operational risks (particularly those arising from the function as Weinberg administrator). Risk from liquidity lines is assessed by the relevant front and back offices at least once every quarter for trading receivables and at least once annually for interest-bearing receivables. The back office informs the front office of any irregularities in the course of the transaction. Moreover, the front office informs the back office immediately of any changes in the ratings of the parties involved as they become known. The back office incorporates the information in the next rating review. Likewise, the front office notifies the back office immediately of any termination events reported by the company (for example, covenant breaches) or if there are imminent signs of a termination event (possible early indications given during conversations). The front office decides whether or not to support a waiver request from the company. Waiver requests are reviewed and processed by the back office with regard to their risk content. In this connection, proposals for the following steps to be taken are drawn up in consultation with the front office.

With one exception, all securitization positions for which LBBW reports risk-weighted securitization values as a sponsor are rated using the Internal Assessment Approach (IAA). The IAA could not be applied to one transaction, as a condition for application was not met. This securitization position is therefore subject to a risk weighting of 1 250 %. All other transactions use the risk weighting tables under Article 261 CRR (IRB approach).

The commercial papers issued by the Weinberg multiseller conduit can be either euro commercial papers (issued by Weinberg Capital DAC, Dublin) or, since 2011, US commercial papers (issued by Weinberg Capital DAC, Dublin, with co-issuer Weinberg Capital LLC, Delaware). However, the conduits continued not to avail of the option of issuing US commercial paper in 2017. The commercial papers are rated by Moody's Investors Service and Fitch Ratings Ltd.

Apart from the Weinberg program (including the associated constructs/SPVs) no other special-purpose vehicles are advised or managed by LBBW as a sponsor or originator.

Originator positions.

LBBW did not hold any originator positions during the 2017 reporting year.

Resecuritizations.

Remaining resecuritization positions at year-end 2016 included two LBBW loans to the special purpose company Sealink of a total equivalent to EUR 4.2 billion (EUR 3.0 billion and EUR 1.2 billion). They were repaid in full in 2017 and are collateralized in cash.

Presentation of the procedures for determining exposure values.

Under the internal credit risk strategy, new securitization positions may be transacted with the Bank's core customers up to a certain limit provided that a detailed analysis of the risk profile is performed and documented in the light of the transaction drivers which are liable to exert a direct or indirect effect on the risk profile of the securitization position.

With the exception of underlying retail tranches, investor positions are recognized as IRB securitization positions while the underlying retail tranches (such as vehicle financings) are recognized as CRSA securitization positions.

The Bank normally uses the ratings based approach in the investor portfolio for IRB securitization positions and the derived credit rating assessment only sporadically.

The majority of investments are classified as high quality and granular and normally have at least one rating from a recognized rating agency. If no external rating is available, the Bank applies the supervisory formula approach for securitizations in accordance with the IRB approach.

The liquidity lines and swaps (sponsor positions) provided as part of the ABCP (asset-backed commercial paper) program are weighted using the Internal Assessment Approach (IAA). To this end, LBBW developed and rolled out corresponding models for measuring trading and interest-bearing receivables in 2008. The IAA method is generally based on publicly available models of the rating agencies.

The IAA module for the securitization of trading receivables takes into account the asset credit risk (credit rating risks) and the seller risk as counterparty risk. The latter includes the dilution and the commingling risk as further sub-categories. In addition, the IAA module covers the transaction risk that emerges if a seller is no longer able to bear the transaction costs incurred (e.g. SPV costs, funding costs). This is typically the case in the event of a premature winding-down of the transaction following the seller's insolvency. The module for interest-bearing receivables is based on the assumption that there are no open residual value risks and that the portfolios are granular. As with trading receivables, a distinction is made with interest-bearing receivables between the risks of the asset pool (asset credit risk) and seller risks (in addition to the dilution risk, commingling risk and transaction/funding costs risk including interest rate risk). If there is an excess spread, a prepayment risk may result. The prepayment risk is the risk that the future excess spread of this receivable is no longer available as a credit enhancement due to an early termination of the contract underlying the interest-bearing receivable.

The chart below shows the allocation of potential losses, broken down into the four main types of risk, to the individual credit enhancement components:

Asset credit risk	Dilution risk	Transactions costs	Commingling risk	
Liquidity facility	Liquidity facility	Liquidity facility	Liquidity facility	
	Funding cost reserve	Dilution reserve	Dilution reserve	Funding cost reserve
Sec. Loss Piece (surety or credit agreement)	Dilution reserve	Funding cost reserve		
First loss piece seller	Seller	Seller	Seller/Servicer	

Figure 60: Principal types of risk on credit enhancement components.

The IAA module is used for assessing the risk of the liquidity lines (rating review/rating renewal) for trading receivables and for interest-bearing receivables by the relevant front and back office divisions.

The internal rating procedure is validated on an annual basis. This is overseen by an organizational unit within Group Risk Control. The validation results are submitted to the front and back offices that manage the ABCP program or the securitization positions that are assessed with the IAA modules. The Risk Committee and/or the Board of Managing Directors verifies the validation results.

If LBBW purchases commercial papers (CP) under its own ABCP program, this is classified as an overlapping position under Article 246 (2) CRR. This means that the risk exposures are backed by the risk weightings of the securitization liquidity facilities provided by LBBW under Article 246 (3) CRR.

10.2 Securitization positions in the trading book.

LBBW did not trade in any trading-book securitization positions in 2017. Furthermore, LBBW does not have any retained or assumed resecuritization positions from this.

10.3 Accounting and valuation methods for securitizations.

LBBW essentially held the role of investor, sponsor and/or arranger, service provider (structuring, administration, coordination, account maintenance), securities trustee or bank providing liquidity in securitization transactions for special-purpose vehicles.

As at 31 December 2017 LBBW did not hold any assets connected with securitization transactions without the transfer of receivables or earmarked for securitization.

Consolidation rules.

Under IFRS 10, a special-purpose vehicle is assumed to be controlled by LBBW or one of its subsidiaries if the role that it plays with respect to the special-purpose vehicle cumulatively satisfies the following three conditions:

- LBBW has direct or indirect decision-making authority to determine key business activities for the economic success of an enterprise.
- It is subject to variable returns from these companies that can be either positive or negative.
- It can use its decision-making authority to influence the amount of the company's variable returns.

The consolidation of special-purpose vehicles is not dependent on the amount of the capital investment or the percentage of voting rights. The accounting basis for consolidation under IFRS may deviate from the regulatory group due to differing statutory conditions for consolidation.

The following special-purpose vehicles in connection with securitization transactions were included in the IFRS consolidated financial statements as at 31 December 2017:

- Weinberg Capital DAC, Dublin
- Weinberg Funding Ltd., Jersey
- PALS Funding 2 LLC, Delaware.

All the assets and liabilities held by these SPVs are included in LBBW's consolidated financial statements.

If the link between LBBW and a special-purpose vehicle does not result in the latter being included in the IFRS consolidated financial statements, only the relationship to the special-purpose vehicle is reflected in the income statement.

LBBW as investor.

The securitization products acquired by the LBBW Group as an investor are allocated to the banking book for regulatory purposes.

In accordance with IFRS, the products were assigned to the »held for trading«, »fair value option«, »available for sale« or »loans and receivables« categories at the time of their acquisition and duly measured on the basis of their documented purpose in accordance with the criteria defined in IAS 39.9. For more information on IFRS accounting see also the consolidated financial statements of LBBW, Note 6 on financial instruments.

Financial instruments which are categorized as »held for trading« or »fair value option« are measured at their fair value. Net measurement and realized gains and losses are reported within net gains and losses from financial instruments measured at fair value. Current income is reported within net interest income.

Financial instruments classified as available for sale are measured at fair value. Net measurement gains and losses are reported within equity (revaluation reserve). In the event of an impairment or disposal, the net gains and losses are recycled to profit and loss and reported within net gains/losses from financial Investments. Current net gains and losses are reported within net interest income.

Fair value is defined in accordance with IFRS 13 as the price at which an asset or liability could be exchanged at the measurement date in an orderly transaction between market participants. Reference should be made to Note 54 of the Annual Report for further information on the measurement of the fair value of financial instruments (i.a. especially for securitizations).

Financial instruments which are classified as loans and receivables are measured at amortized cost. Any impairment recognized through profit and loss is reported within net income from financial investments. Current income is reported within net interest income.

LBBW as sponsor, arranger, service provider or collateral trustee.

If LBBW acts solely as sponsor, arranger, service provider or collateral trustee in customer transactions, this does not result in assets requiring disclosure in the balance sheet.

LBBW as bank granting liquidity.

If LBBW makes liquidity facilities available, they must be categorized as loans and receivables (IFRS) upon utilization and measured at amortized cost.

Upon utilization, swaps are recognized as derivatives and classified as held for trading under IFRS and measured at fair value through profit and loss.

LBBW as protection buyer (risk shield).

The maximum guarantee of EUR 4.2 billion agreed with a guarantee entity of the State of Baden-Württemberg as part of a guarantee structure to secure a loan to Sealink Funding DAC (Sealink), a non-consolidated special-purpose company, was dissolved in 2017.

10.4 Presentation of securitization positions in accordance with CRR.

The CRR provisions apply to the information provided in the following tables, which may differ from the presentation for securitization positions shown in other reports.

The following table shows the receivables effectively securitized by LBBW as an originator and its sponsor activities. LBBW did not transact any securitization positions without the transfer of receivables.

EUR million	Originator positions			Sponsor activities		
	Banking book					
Type of securitized receivable	Traditional	Synthetic	Total	Banking book	Trading book	Total
Receivables	-	-	-	2 997	-	2 997
from residential construction loans	-	-	-	-	-	-
from total or partial commercial real estate loans	-	-	-	-	-	-
from corporates (including SMEs)	-	-	-	1 534	-	1 534
from own and purchased lease receivables	-	-	-	1 308	-	1 308
from automotive financing (excl. leasing)	-	-	-	155	-	155
from other retail business	-	-	-	-	-	-
from CDOs and ABS	-	-	-	-	-	-
Derivatives	-	-	-	6	-	6
Credit enhancements	-	-	-	-	-	-
Resecuritizations	-	-	-	-	-	-
Total	-	-	-	**3 003**	-	**3 003**
Total previous year	-	-	-	**2 686**	**0**	**2 686**

Figure 61: Total outstanding securitized receivables and securitization transactions in which LBBW took part as an originator or sponsor (Article 449 (n) (i) CRR).

The following table sets out the Bank's securitization positions as a sponsor and investor. Under the underlying CRR approach, securitization positions acquired are categorized according to whether they are held in the trading or the banking book and on the basis of the type of securitized assets.

EUR million	Banking book		
Securitization positions	Exposure values under the CRS approach	Exposure values under the IRB approach	Trading book
Receivables	15	797	-
from residential construction loans	-	-	-
from total or partial commercial real estate loans	-	25	-
from corporates (including SMEs)	-	74	-
from own and purchased lease receivables	-	699	-
from automotive financing (excl. leasing)	15	-	-
from other retail business	-	-	-
from CDOs and ABS	-	-	-
Resecuritizations	-	-	-
of which guarantee portfolio	-	-	-
Credit enhancements	-	-	-
Drawn liquidity facilities	-	-	-
Other balance sheet items	-	-	-
Total balance sheet items	**15**	**797**	**-**
Liquidity facilities	-	2 997	-
Derivatives	-	6	-
of which resecuritizations	-	-	-
Positions specifically for synthetic transactions	-	-	-
Other off-balance-sheet items	-	-	-
Total off-balance-sheet items	**-**	**3 003**	**-**
Total	**15**	**3 800**	**-**
Total previous year	**53**	**2 960**	**-**

Figure 62: Total securitization positions retained or purchased
(Article 449 (n) (ii) CRR).

The increase in balance sheet items over the previous year results primarily from the following items:

- »Receivables from own and purchased lease receivables«. The increase reflects the increase in an existing investor position and from a new investor position.
- »Receivables from corporates (including SMEs)«. The increase reflects a new investor position.
- »Drawn liquidity facilities«. The reduction results from the fact that none of the liquidity facilities for the Weinberg ABCP transactions had been drawn upon at 31 December 2017.
- The increase in the off-balance-sheet items is due to five new Weinberg ABCP transactions with interest-bearing receivables and trading receivables and to an increase in existing Weinberg ABCP transactions.

As at 31 December 2017, no assets were awaiting securitization in accordance with Article 449 (n) (iii) CRR.

LBBW did not engage in any securitization activities as an originator in 2017. Accordingly, no gains or losses were realized or reported in accordance with Article 449 n (vi) CRR, or in accordance with Article 499 n (iv) CRR.

The following figure shows the securitization positions to be included with a risk weight of 1 250 %.

EUR million	Securitization positions with a risk weight of 1 250 %	
Securitization positions	Banking book	Trading book
Receivables	-	-
from residential construction loans	-	-
from total or partial commercial real estate loans	-	-
from corporates (including SMEs)	-	-
from own and purchased lease receivables	-	-
from automotive financing (excl. leasing)	-	-
from other retail business	-	-
from CDOs and ABS	-	-
Resecuritizations	-	-
Credit enhancements	-	-
Other balance sheet items	-	-
Total balance sheet items	-	-
Liquidity facilities	29	-
Derivatives	-	-
Positions specifically for synthetic transactions	-	-
Other off-balance-sheet items	-	-
Total off-balance-sheet items	**29**	-
Total	**29**	-
Total previous year	**39**	-

Figure 63: Total securitization positions risk-weighted at 1 250 % (Article 449 (n) (v) CRR)

In the following table the exposure values and capital requirement for securitizations are broken down by the approach used, the risk weighting bands, by banking book or trading book, securitization or resecuritization.

EUR million	Banking book						Trading book					
	Securitizations		Resecuritizations		Total		Securitizations		Resecuritizations		Total	
Risk weight bands	Exposure value	Capital requirement	Exposure value	Capital requirement	Exposure value	Capital requirement	Exposure value	Capital requirement	Exposure value	Capital requirement	Exposure value	Capital requirement
Standard approach												
20 %	15	-	-	-	15	-	-	-	-	-	-	-
40 %	-	-	-	-	-	-	-	-	-	-	-	-
50 %	-	-	-	-	-	-	-	-	-	-	-	-
100 %	-	-	-	-	-	-	-	-	-	-	-	-
225 %	-	-	-	-	-	-	-	-	-	-	-	-
350 %	-	-	-	-	-	-	-	-	-	-	-	-
650 %	-	-	-	-	-	-	-	-	-	-	-	-
1 250 %	-	-	-	-	-	-	-	-	-	-	-	-
Total	**15**	-	-	-	**15**	-	-	-	-	-	-	-
Look-through approach												
≤ 10 %	-	-	-	-	-	-	-	-	-	-	-	-
> 10 % ≤ 20 %	-	-	-	-	-	-	-	-	-	-	-	-
> 20 % ≤ 50 %	-	-	-	-	-	-	-	-	-	-	-	-
> 50 % ≤ 100 %	-	-	-	-	-	-	-	-	-	-	-	-
> 100 % ≤ 250 %	-	-	-	-	-	-	-	-	-	-	-	-
> 250 % ≤ 650 %	-	-	-	-	-	-	-	-	-	-	-	-
> 650 % ≤ 1 250 %	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-	-	-
Ratings based approach												
≤ 10 %	624	4	-	-	624	4	-	-	-	-	-	-
> 10 % ≤ 20 %	74	1	-	-	74	1	-	-	-	-	-	-
> 20 % ≤ 50 %	-	-	-	-	-	-	-	-	-	-	-	-
> 50 % ≤ 100 %	-	-	-	-	-	-	-	-	-	-	-	-
> 100 % ≤ 250 %	-	-	-	-	-	-	-	-	-	-	-	-
> 250 % ≤ 650 %	-	-	-	-	-	-	-	-	-	-	-	-
> 650 % ≤ 1 250 %	29	29	-	-	29	29	-	-	-	-	-	-
Total	**728**	**34**	-	-	**728**	**34**	-	-	-	-	-	-
Supervisory formula approach												
≤ 10 %	-	-	-	-	-	-	-	-	-	-	-	-
> 10 % ≤ 20 %	-	-	-	-	-	-	-	-	-	-	-	-
> 20 % ≤ 50 %	74	3	-	-	74	3	-	-	-	-	-	-
> 50 % ≤ 100 %	25	1	-	-	25	1	-	-	-	-	-	-
> 100 % ≤ 250 %	-	-	-	-	-	-	-	-	-	-	-	-
> 250 % ≤ 650 %	-	-	-	-	-	-	-	-	-	-	-	-
> 650 % ≤ 1 250 %	-	-	-	-	-	-	-	-	-	-	-	-
Total	**99**	**4**	-	-	**99**	**4**	-	-	-	-	-	-
Internal Assessment Approach												
≤ 10 %	1 192	9	-	-	1 192	9	-	-	-	-	-	-
> 10 % ≤ 20 %	835	12	-	-	835	12	-	-	-	-	-	-
> 20 % ≤ 50 %	875	23	-	-	875	23	-	-	-	-	-	-
> 50 % ≤ 100 %	71	4	-	-	71	4	-	-	-	-	-	-
> 100 % ≤ 250 %	-	-	-	-	-	-	-	-	-	-	-	-
> 250 % ≤ 650 %	-	-	-	-	-	-	-	-	-	-	-	-
> 650 % ≤ 1 250 %	-	-	-	-	-	-	-	-	-	-	-	-
Capital deduction	-	-	-	-	-	-	-	-	-	-	-	-
Total	**2 974**	**49**	-	-	**2 974**	**49**	-	-	-	-	-	-
Total	**3 815**	**87**	-	-	**3 815**	**87**	-	-	-	-	-	-
Total previous year	3 012	89	-	-	3 012	89	-	-	-	-	-	-

Figure 64: Total retained or purchased securitization positions and capital requirements, broken down by approach used and by risk weight band (Article 449 (o) (i) CRR).

LBBW did not have any non-performing or past due loans or losses coming within Article 449 (p) CRR. Furthermore, there are no trading book risk positions that were securitized in accordance with Article 449 (q) CRR.

LBBW did not provide any implicit support (Article 248 CRR) in the 2017 reporting period.

11 Exposure in equities not included in the trading book (Article 447 CRR).

In line with risk and return considerations, LBBW's strategic equity investments help the Bank implement its operating policy, thus strengthening LBBW's market position in terms of target customers and key products. By outsourcing market, staff and operating functions to subsidiaries and associated companies, this ensures ideal utilization of market potential.

The same profitability requirements generally apply to LBBW's own strategic investment business as for its front offices.

In addition to the equity investments that are consolidated for regulatory purposes or deducted from liable equity capital (see chapter 3 »Scope«, Figure 4), LBBW also has further equity investments in its banking book with own funds requirements in accordance with the IRB approach or, if grandfathering applies, the CRS approach.

For regulatory purposes, LBBW distinguishes when using the IRB approach between investment positions that are part of a portfolio managed in terms of probability of default (PD/LGD method) and those handled using the simple risk weight approach. For the last time in 2017, investment positions that were already held before 1 January 2008 are measured in line with the CRS approach under grandfathering arrangements (protection of pre-existing legal rights).

On the date of acquisition, equity investments which are not consolidated are measured at historical cost (including transaction costs) and subsequently remeasured at fair value in line with IFRS. For listed companies, the respective market price as at the balance sheet date is used for valuation. The fair value of non-listed companies is calculated on the basis of available multi-year forecasts using the income capitalization approach or the discounted cash flow method (DCF method) in line with the principles of the IDW. If the capitalized income method or the DCF method is not appropriate, valuations are performed on the basis of net asset value (NAV) or transaction value or in relation to the equity share. If the carrying amount of an equity investment is less than EUR 250,000, the existing valuation is retained.

Carrying amounts of investment positions in the banking book.

The following table breaks down the non-consolidated investment positions by type and tradability and shows the balance sheet value recorded in the consolidated financial statements and the fair value. For listed companies the fair value is always equivalent to the stock-market value. If a fair value has not been calculated for internal or external purposes, then the carrying amount is used.

EUR million Groups of investment instruments	Carrying value according to IFRS	Fair value	Stock-market value
Equity investments in banks	**581**	**588**	**459**
of which exchange-traded	459	459	459
of which not exchange-traded	122	129	-
Equity investments in financial institutions	**199**	**199**	**-**
of which exchange-traded	-	-	-
of which not exchange-traded	199	199	-
Equity investments in other companies	**202**	**200**	**19**
of which exchange-traded	18	19	19
of which not exchange-traded	184	181	-
Affiliated companies - banks	**6**	**7**	**-**
of which exchange-traded	-	-	-
of which not exchange-traded	6	7	-
Affiliated companies - financial institutions	**20**	**20**	**-**
of which exchange-traded	-	-	-
of which not exchange-traded	20	20	-
Affiliated companies - other companies	**582**	**585**	**-**
of which exchange-traded	-	-	-
of which not exchange-traded	582	585	-
Investment funds	**221**	**221**	**-**
of which exchange-traded	-	-	-
of which not exchange-traded	221	221	-
Total	**1 811**	**1 820**	**478**
Total previous year	**2 007**	**1 983**	**417**

Figure 65: Carrying amounts of investment positions in the banking book (Article 447 (b) and (c) CRR).

The following table sets out realized and unrealized gains and losses from equity investments outside the supervisory consolidation base in line with IFRS accounting for the reporting period.

In 2017, it was possible to include unrealized gains from investment instruments as common equity Tier 1 capital at 80 %, according to the transitional provisions pursuant to Article 468 CRR.

EUR million	31 Dec. 2017	31 Dec. 2016
Realized gains (+) and losses (-) from sale/liquidation	**72**	**88**
Unrealized gains (+) and losses (-) from equity instruments	**208**	**14**
of which amounts recognized in capital under CRR:	**42**	**9**
in Tier 1 capital	42	9
in Tier 2 capital	0	0

Figure 66: Realized and unrealized gains/losses from investment positions (Article 447 (d) and (e) CRR).

12 Operational risk (Article 446 CRR).

In accordance with regulatory requirements, operational risks are defined as »the risk of losses arising due to the unsuitability or failure of internal processes and systems, people, or due to external events«. This definition also includes legal risks. Business risks and reputation risks are not included under operational risks.

The LBBW Group has a comprehensive system for the management and controlling of operational risks.

Risk measurement	▪ Pillar I: Standard approach ▪ Pillar II: OpVaR
Risk monitoring and reporting	▪ Dual overall approach; central, decentral ▪ Central parameters: strategy and rules and regulations ▪ Organizational model: roles and responsibilities ▪ Risk monitoring: OpRisk Controlling methods and instruments ▪ Derivative sales process, scoring system for risk indicators ▪ Internal reporting (quarterly to the Risk Committee, monthly to the Internal Risk Committee, ad-hoc reportings) ▪ External reporting ▪ Risk situation
Risk management	▪ Observing the specifications set for the »operational risk strategy« ▪ Determining the action strategies decentrally ▪ The management of measures for reducing risk

Figure 67: Management of operational risks.

On the basis of a dual overall approach, firstly an independent, centralized organizational unit within the Group Risk Control division is tasked with further developing and implementing the methods and tools used by OpRisk controlling. Secondly, in the LBBW Group, the execution of the processes implemented for the management of operational risks is mainly the responsibility of the individual divisions and subsidiaries.

The central parameters for handling operational risks are enshrined in the risk strategy and policy governing operational risks as well as in the framework and work instructions.

One of the main goals of the management and control activities is to identify operational risks at an early stage, to present a transparent picture of them and to manage them actively from a cost point of view. Besides the internal control system and an open risk culture, the sensitivity to risks of all staff members and the handling of risks in an open manner thus play another important role in limiting operational risks. The objective is to minimize or avoid risks, taking cost/benefit aspects into consideration.

Internal and external loss event data, the annual risk inventory (self-assessment and scenario analysis) and risk indicators are used to identify the risk situation. The centralized OpRisk Controlling unit provides decision-makers with relevant information as part of regular risk reporting. Furthermore, there is a constant exchange of data and experience between various persons in charge of interfaces.

The overall exposure to operational risks is aggregated within the risk-bearing capacity concept on the basis of operational value-at-risk (OpVaR) in the LBBW Group's limit system.

The standard approach under Article 317 et seqq. CRR is applied to determine own fund requirements for regulatory purposes. The own funds required came to EUR 361 million (previous year: EUR 377 million) as at 31 December 2017.

Further information on operational risks can be found in the chapter »Operational risks« in the report on risks and opportunities of the LBBW Group, p. 88 et seqq.

13 Leverage ratio. (Article 451 CRR)

Disclosure of the leverage ratio as at 31 December 2017 is based on the stipulations of the Commission Delegated Regulation (EU) No. 2015/62 of 10 October 2014 amending the CRR with regard to the leverage ratio. The capital measure is based on Tier 1 capital taking into account the transitional provisions (phase-in) (Article 499 (1) (b) CRR).

1 Description of procedures to monitor the risk of excessive indebtedness	Description under LRQua 1
2 Description of factors which had an impact on the disclosed leverage ratio during the period under review	Description under LRQua 2

Figure 68: Disclosure of qualitative elements.

13.1 LRQua 1: Description of procedures to monitor the risk of excessive indebtedness.

LBBW takes account of the risk of excessive indebtedness by including the leverage ratio in its planning and management process. An internal future target for the leverage ratio is calculated on the basis of LBBW's business and risk strategy and its implementation in medium-term planning. The management of the leverage ratio is embedded in the management of the LBBW Group's balance-sheet structure. At monthly intervals LBBW's comprehensive internal management reporting is used to report on the leverage ratio and key influencing factors. If required, the management approaches of the leverage ratio that have been identified for LBBW are discussed in the Asset Liability Committee (ALCo) in detail. The ALCo submits proposals for specific management measures to the Group's Board of Managing Directors where appropriate. Decisions are taken by the Group's Board of Managing Directors.

13.2 LRQua 2: Description of factors which had an impact on the disclosed leverage ratio during the period under review.

The leverage ratio on the basis of the CRR transitional provisions (phase-in) came to 5.0 % at 31 December 2017 (as at 31 December 2016: 5.0 %). The leverage ratio exposure (»phase-in«) rose fractionally from EUR 255 925 million as at 31 December 2016 to EUR 257 740 million as at 31 December 2017 (+ EUR 1 815 million).

At the same time, the increase in banking book exposures to institutions and corporates was reduced by a decline in other exposures in the banking book.

EUR million		Figures to be used
1	Total assets according to the published accounts	237 713
2	Adjustment for corporates that are consolidated for accounting purposes but do not form part of the regulatory basis of consolidation	- 2 763
3	(Adjustment for fiduciary assets recognized in the balance sheet according to the applicable accounting provisions but which under Article 429 (13) of Regulation (EU) No. 575/2013 are excluded from the leverage ratio total exposure measure)	-
4	Adjustment for derivative financial instruments	- 5 613
5	Adjustment for securities financing transactions (SFTs)	4 096
6	Adjustment for off-balance-sheet items (i.e. conversion of off-balance-sheet exposures into credit equivalent amounts)	19 878
EU-6a	(Adjustments for intra-group risk exposures which are excluded from the leverage ratio total exposure measure in accordance with Article 429 (7) of Regulation (EU) No. 575/2013)	-
EU-6b	(Adjustments for risk exposures which are excluded from the leverage ratio total exposure measure in accordance with Article 429 (14) of Regulation (EU) No. 575/2013)	-
7	Other adjustments	4 430
8	**Leverage ratio total exposure measure**	**257 740**

Figure 69: Comparison between balance sheet and overall exposure value measurement

EUR million		Risk exposure values of the CRR leverage ratio
On-balance-sheet risk exposures (excluding derivatives and SFTs)		
1	On-balance-sheet items (excluding derivatives, SFTs and fiduciary assets but including collateral)	199 277
2	(Asset amounts deducted in the calculation of Tier 1 capital)	- 653
3	Total of on-balance-sheet risk exposures (excluding derivatives, SFTs and fiduciary assets) (total of rows 1 and 2)	198 624
4	Future exposure for all derivatives transactions (i.e. excluding eligible additional contributions received in cash)	6 518
5	Premiums for the potential future exposure for all derivatives transactions (mark-to-market measurement method)	10 586
EU-5a	Risk exposure valued in accordance with the Original Exposure Method	-
6	Addition of amount of collateral furnished in connection with derivatives that is deducted from total assets according to the applicable accounting standard	
7	(Deductions from receivables for additional contributions in cash for derivatives transactions)	- 5 168
8	(Excluded CCP portion of customer-cleared trading positions)	- 1 186
9	Adjusted effective nominal value of written credit derivatives	6 863
10	(Netting of adjusted effective nominal values and deduction of premiums for written credit derivatives)	- 3 524
11	Total risk exposures from derivatives (total of rows 4 to 10)	14 090
Risk exposures from securities financing transactions (SFTs)		
12	Gross assets from SFTs (without recognition of netting) after adjustment for transactions booked as sales	25 882
13	(Netted amounts of cash liabilities and receivables from gross assets from SFTs)	- 3 925
14	Counterparty default risk exposures for SFT assets	3 191
EU-14a	Divergent treatment of SFTs; counterparty default risk exposure in accordance with Article 429b (4) and Article 22 of Regulation (EU) No. 575/2013	-
15	Risk exposures from transactions realized as an agent	-
EU-15a	(Excluded CCP portion of customer-cleared SFT risk exposures)	-
16	Total of risk exposures from securities financing transactions (total of rows 12 to 15a)	25 148
Other off-balance-sheet risk exposures		
17	Off-balance-sheet risk exposures at their gross nominal value	51 583
18	(Adjustments for the conversion into credit equivalent amounts)	- 31 704
19	Other off-balance-sheet risk exposures (total of rows 17 and 18)	19 878
(On-balance-sheet and off-balance-sheet) risk exposures which may be excluded pursuant to Article 429 (14) of Regulation (EU) No. 575/2013		
EU-19a	(On-balance-sheet and off-balance-sheet) intra-group risk exposures (individual basis) which are excluded pursuant to Article 429 (7) of Regulation (EU) No. 575/2013	-
EU-19b	(On-balance-sheet and off-balance-sheet risk exposures which may be excluded pursuant to Article 429 (14) of Regulation (EU) No. 575/2013)	-
Equity and leverage ratio total exposure measure		
20	Tier 1 capital	12 795
21	Leverage ratio total exposure measure (total of rows 3, 11, 16, 19, EU-19a and EU-19b)	257 740
Leverage ratio		
22	Leverage ratio	5.0%
Application of transitional provisions and value of derecognized fiduciary items		
EU-23	Transitional provision chosen for the definition of the capital measure	Phase-in
EU-24	Amount of fiduciary assets removed from the balance sheet in accordance with Article 429 (11) of Regulation (EU) No. 575/2013	-

Figure 70: Uniform disclosure schema for the leverage ratio.

EUR million		Risk exposure values of the CRR leverage ratio
EU-1	**Total of on-balance-sheet risk exposures (excluding derivatives, SFTs and excluded risk exposures), of which:**	**193 674**
EU-2	**Risk exposures in the trading book**	**12 107**
EU-3	**Risk exposures in the trading book, of which:**	**181 567**
EU-4	Covered bonds	3 005
EU-5	Risk exposures treated as risk exposures towards sovereigns	50 341
EU-6	Risk exposures to regional authorities, multilateral development banks, international organizations and public-sector bodies which are not treated as risk exposures towards sovereigns	268
EU-7	Banks	38 657
EU-8	Collateralized by real estate liens	17 442
EU-9	Risk exposures from retail business	5 399
EU-10	Corporates	60 773
EU-11	Defaulted exposures	746
EU-12	Other risk exposures (e.g. equity investments, securitizations and other assets that are not loan commitments)	4 936

Figure 71: Breakdown of balance-sheet risk exposures (excluding derivatives, securities financing transactions (SFTs) and excluded risk exposures).

14 Asset encumbrance (Article 443 CRR).

Asset encumbrance as defined in Guideline 2014/03 [1] issued by the European Banking Authority (EBA) deals with on- and off-balance-sheet assets. Under the EBA definition, an asset is encumbered if it is used as collateral or is the subject of any form of agreement on the provision of collateral, the securing or grant of loan collateral for a transaction from which it cannot be withdrawn without prior approval.[2] The value of encumbered assets is therefore fundamentally influenced by a bank's business model.

A large part of the encumbered assets results from LBBW's function as the clearing bank for the savings banks. This particularly causes an increase in encumbered assets allocated to the derivatives, promotional pass-through loans and also repo transactions category. LBBW has encumbered (on-balance-sheet) assets of EUR 87.0 billion (previous year: EUR 100.6 billion) and unencumbered assets of EUR 165.6 billion (previous year: EUR 152.1 billion).[3] The encumbered on-balance-sheet assets primarily relate to the following positions:

- Covered bonds: LBBW issues covered bond in accordance with German covered bond legislation. Accordingly, 30 % (previous year: 29 %) of the encumbered assets are for covered bonds. The figures include the statutory, the rating-related and the voluntary surplus cover. The high voluntary overcollateralization is therefore a major contributory factor to the asset encumbrance ratio.
- Derivatives: 21 % (previous year: 29 %) of the encumbered assets are related to OTC derivatives. Positive fair values under derivatives particularly result in an encumbrance as they are reported within gross asset encumbrance (without netting of the corresponding liability position). In contrast, derivatives with central counterparties are reported on a netted basis. LBBW transacts derivatives under national and international agreements (German Rahmenvertrag for futures transactions and ISDA Master Agreement) and with corresponding credit support annexes and their amendments.
- Promotional pass-through loans: LBBW passes on loans provided by promotional/development banks to the savings banks. These pass-through loans are classed as encumbered assets. Encumbered pass-through loans account for 29 % (previous year: 24 %) of the encumbered assets.
- Repos: LBBW uses bilateral and triparty repo markets such as Eurex GC Pooling and Fixed Income Clearing Corporation (FICC) for funding purposes. The influence of repo transactions on asset encumbrance is now very small. A total of 1 % (previous year: 3 %) of the encumbered on-balance-sheet assets are used for repos. Repos with central counterparties are reported on a netted basis. LBBW transacts repos under national and international repo contracts (German Rahmenvertrag for repo transactions and Global Master Repurchase Agreement).

1 »Guideline on disclosure of encumbered and unencumbered assets.«
2 See Commission Implementing Regulation (EU) 2015/79 of 18 December 2014, Chapter 1.7 for a definition.
3 This disclosure of encumbered assets is based on the median figures of the four reporting qualifying dates.

Virtually all encumbrances are driven by LBBW itself. There are only negligible encumbrances within the LBBW Group.

EUR million	Carrying amount of encumbered assets	Fair value of encumbered assets	Carrying amount of unencumbered assets	Fair value of unencumbered assets
Assets of the reporting bank	**87 038**		**165 612**	
Equity instruments	39	39	1 176	1 312
Debt securities	9 436	9 389	24 135	24 315
Other assets	15 282		10 948[1]	

Figure 72: Assets.

1 This item primarily comprises derivatives as well as controlling equity investments, property and equipment and cash and cash equivalents (previous year: EUR 15.6 billion).

LBBW has received collateral worth a total of EUR 42.9 billion (previous year: EUR 41.2 billion); of this, EUR 17.5 billion (previous year: EUR 20.7 billion) has been reused. The reused collateral is particularly related to repo and securities lending business.

EUR million	Fair value of encumbered collateral received or own bonds issued	Fair value of collateral received or own bonds issued suitable for encumbrance
Collateral received by the reporting bank	**17 475**	**25 418**
Equity instruments	360	593
Debt securities	17 184	24 859
Other collateral received	0	0
Own bonds issue excluding own covered bonds or asset-backed securities	**2**	**1 378**

Figure 73: Collateral received.

EUR million	Matching liabilities, contingent liabilities or lent securities	Assets, collateral received and other own bonds issued except covered bonds and encumbered asset-backed securities
Carrying amount of selected financial liabilities	**76 370**	**85 376**

Figure 74: Sources of encumbrance.

15 Liquidity coverage ratio (Article 435 CRR).

Liquidity coverage ratio.

The EBA's Guidelines on disclosure requirements (EBA/GL/2017/01) set out a harmonized structure for the disclosure of information required in accordance with Article 435 (1) CRR ((EU) 575/2013) regarding liquidity risk. In addition, the guidelines include specifications and requirements as to which information institutions must disclose with regard to the liquidity coverage ratio (LCR).

The LCR shows the short-term resilience of the liquidity profile within the next 30 days and is thereby defined as the ratio of liquid assets (liquidity buffer) to total net cash outflows.

Liquidity risk management.

Definition.

LBBW's liquidity risk monitoring and management activities draw a distinction between short-term liquidity risk in the narrower sense, which represents the risk of insolvency due to an acute funding shortfall, and the funding (spread) risk, which describes the adverse effects on income resulting from a possible deterioration of funding spreads.

Liquidity risk management.

Risk measurement	▪ Calculation of funding requirements and funding potential ▪ Quantification of all material call risks ▪ Monitoring of intraday liquidity ▪ Liquidity stress testing ▪ Assessment of structural liquidity ▪ Analysis of the investor base for possible concentrations
Risk monitoring and reporting	▪ Detailed daily reports on funding requirements (deterministic cash flow) per location and currency and quantification of liquidity reserves ▪ At least monthly reports on funding requirements (including call-risks) and funding potential of the Group ▪ Monthly reports on all aspects of the liquidity and funding risk in the Risk Committee and ALCO
Risk management	▪ Liquidity risk tolerance specifications in the form of limits for maximum funding requirements and survival times ▪ Defined escalation routes in the event of a breach of the specifications ▪ Management of the asset and equity/liabilities side of the balance sheet via funds transfer pricing

Figures 75: Overview of issues relating to liquidity risk management.

Risk measurement.

The risk relating to the availability at all time of sufficient cash and cash equivalents is not an earnings risk. Consequently, liquidity risk cannot be quantified and assessed appropriately by calculating a potential financial loss as value-at-risk. At LBBW, liquidity risk is therefore managed using quantitative specifications and limits which are set in accordance with senior management's liquidity risk tolerance.

Determining liquidity risk positions involves, among other factors:

- Daily calculation of day-specific liquidity gaps (funding requirements based on net maturities from the business portfolio) in all currencies for LBBW (Bank).
- Quantification of all material call risks on a daily basis.
- Calculating the potential funding available from central bank on a daily basis.
- Drawing up day-specific liquidity gaps and the liquidity portfolio for the LBBW Group (from the overall funding requirements and potential) twice a week.
- Conducting a five-day stress test on a daily basis as well as calculating stress tests on a monthly basis and longer-term stress tests as required. Ongoing review and adjustment of assumptions and parameters used, if necessary.
- Monthly preparation of a liquidity flow analysis to assess structural liquidity and as the basis for planning funding.

- Preparing investor lists on the basis of which possible concentrations and any changes with regard to the diversification of the investor base can be identified.
- Monitoring and calculating key figures on intraday liquidity.

Liquidity risk tolerance is primarily defined by reference to a survival period concept, i.e. time frames are specified by senior management over which LBBW is expected to remain at least solvent, even in the event of severely limited opportunities to borrow on the market, subject to different combinations of assumptions (development paths).

The assumptions to be made in the regular check of adherence to these parameters, especially within the framework of stress tests, are regularly checked to determine whether they are still adequate under the ongoing market conditions. If they need to be adjusted due to current developments, this is reported to senior management via the Risk Committee and, if approved, results in timely adjustments.

In addition, there is a limit system for the maximum funding requirements based on maturities from the business portfolio across various time frames and currencies, and utilization reviews that match the funding requirements with the potential funding.

The following measures, amongst other things, are used for the early identification of new call risks or increased risk from known but previously immaterial call risks:

- Permanent analysis of the documented business operations (overall risk report, ALCo documents, New Product Processes) with regard to new or increasingly significant call risks.
- A liquidity group consisting of Treasury, Risk Controlling, Regulatory Reporting and Financial Controlling convenes regularly for an operational report on current liquidity issues.
- Monitoring the daily intraday liquidity as part of the active liquidity management via the ECB account. Additional check to see if large cash flows occur that are not from transactions due or other familiar causes of payment flows.
- Reviews of models, assumptions and materiality classifications within the scope of the Group's risk inventory processes.

All key subsidiaries as defined in the risk inventory (Risk Management Group) and conduits are transferred via the liquidity risk strategy into a single framework for strategic specifications of the activities involving liquidity risks. This is achieved by, for example, determining requirements for structuring funding or reporting obligations. The liquidity risks for subsidiaries and affiliates are assessed on a case-by-case basis and dealt with in the same way as at LBBW (Bank) according to their materiality.

Risk monitoring and reporting.

The regular monitoring of liquidity risks is the responsibility of the LBBW Risk Committee at the management level. It prepares decisions for the Group's Board of Managing Directors. Liquidity Risk Control is responsible for daily monitoring at the operational level. All material aspects of liquidity risk, such as liquidity requirements, liquidity buffer and compliance with the specifications on liquidity risk tolerance including the results of the stress tests carried out, are reported in detail monthly in the Risk Committee via the overall risk report and the intraday liquidity on every quarter. Detailed reports are prepared daily as part of the continuous monitoring, which show the different

partial aspects of liquidity and liquidity risk – such as disaggregation of the liquidity gaps by currency – and are distributed to recipients in Group Risk Control and Treasury.

Risk management.

The ALCo, which meets on a monthly basis, is the central body for managing liquidity and funding. The ALCo draws up the liquidity and funding strategy on behalf of the Group's Board of Managing Directors, presents it to the Board for approval and monitors implementation of decisions.

Treasury implements all the decisions to be made by the Asset Liability Committee with the aim of active income and risk optimization while simultaneously ensuring solvency at all times and compliance with the requirements with respect to liquidity risk tolerance. The strategic parameters in terms of liquidity risk tolerance are designed in such a way that the Group's solvency in EUR and foreign currency is secured for a sufficiently long period even in extreme market situations and in the event of a marked deterioration of LBBW's credit rating as perceived by market players in order to survive temporary crises. This also ensures that in the event of temporary adverse developments an adequate time window is available for adapting the business strategy and considering alternative business policies.

The ALCo is responsible for the internal netting interest rates (opportunity interest rates) and for monitoring the steering effects of the opportunity interest rates and pricing models on the business units and liquidity and funding situation of the Group. Group Risk Control monitors the risk adequacy of methods to calculate the internal funds transfer pricing. The ALCo is responsible for the methods. In case of updates, the Risk Committee validates the methods.

Treasury is responsible for the operational management of market- and risk-adequate internal transfer prices that have to be adjusted continuously to market conditions, and is a fundamental component of the management of the assets and liabilities sides of the balance sheet.

The purpose of LBBW's funding strategy is to diversify product and investor groups. In 2017, investments by savings banks and institutional investors within Germany again constituted the main sources of medium- and long-term funding in addition to retail business. Covered bonds continue to represent a material source of funding. These were issued increasingly in the benchmark segment because of the regulatory framework (LCR). In addition, LBBW issued a large-volume four-year green bond for the first time in December.

Treasury is responsible for securing the intraday liquidity. It actively manages the daily payments and calculates liquidity requirements up to the end of the day if necessary, while continuously taking into account payment inflows and outflows that only become known during the course of the day, as well as performing the central bank function for savings banks. Liquidity Risk Control evaluates the daily payments and monitors intraday liquidity, using calculated key figures that are reported to the Risk Committee.

An emergency plan is in place for securing liquidity in acute crisis situations. The provisions made include the formation of a crisis response team bringing in members of the Board of Managing Directors. The emergency plan is reviewed annually and resolved anew by the Board of Managing Directors.

Risk situation of the LBBW Group.

The LBBW Group's liquidity situation was always comfortable during 2017. The customer deposit business showed the steady performance that was desired and capital market placements – both covered and uncovered – attracted lively interest among national and international investors. The LBBW Group's sources of funding are very stable in terms of volume and degree of diversification.

As at the reporting date of 31 December 2017, the funding needs and the counterbalancing capacity were as follows:

EUR million	3 months		12 months	
	31 Dec. 2017	31 Dec. 2016	31 Dec. 2017	31 Dec. 2016
Funding requirements from the business portfolio (deterministic cash flow)	- 7 137	6 651	- 6 897	11 017
Funding requirement from material call risks (stochastic cash flow)	16 734	14 425	32 311	31 748
Funding potential from free liquidity reserves	18 506	19 680	23 393	26 953
Funding potential in the market	45 290	38 107	61 742	53 786

Figure 76: Overview of funding requirements and counterbalancing potential.

The funding requirement from the business portfolio was negative at year-end 2017, as liquidity inflows exceeded the outflows and thus reduced the overall funding requirement. The funding potential was adequate to compensate for any short-term liquidity outflows and continues to ensure significant overcollateralization on a three and 12-month horizon. Over the year as a whole, the surplus cover from cover registers that are not required to preserve the covered bond rating is applied towards the free liquidity reserves and is therefore increasing the total funding potential. The funding potential in the market is approximated on the basis of historical data on the unsecured funds actually raised.

EUR million	Funding needs (3 months)		Funding counterbalancing capacity (3 months)	
	31 Dec. 2017	31 Dec. 2016	31 Dec. 2017	31 Dec. 2016
Rating downgrade scenario	12 959	24 533	39 170	39 949
Financial market crisis scenario	13 025	24 891	51 372	49 771
Combined scenario of market crisis with downgrade	13 214	24 784	46 843	45 960

Figure 77: Results of the economic stress scenarios.

The targeted stress resistance was met throughout 2017. The liquidity risk stress scenarios rating downgrade, financial market crisis, and market crisis with downgrade, structured in accordance with the guidelines of MaRisk (BTR 3.2), show that the remaining funding potential via the market, plus the free liquidity buffer, always exceeds the potential funding requirements under stress scenarios for this period.

In addition to the requirements for stress resistance, the limits and requirements of the LBBW's liquidity risk tolerance set by senior management also include limits for the maximum funding requirement arising from maturities from the business portfolio and requirements concerning their coverage through funding potential. The limitations were observed throughout the whole of 2017 with one one-day outlier (USD limit). The limitation was observed again as of the following day.

The prescribed minimum value of 80 % for the European indicator for short-term liquidity »Liquidity Coverage Ratio (LCR)« for 2017 was observed at all times and well above the requirement as at year-

end 2017 at 145.8 % (31 December 2016: 110 %). This also applies to the requirements of the standard approach of the Liquidity Regulation (LiqV), for which a reporting obligation exists for the last time this year. At 1.92 as at 31 December 2017, it also clearly exceeded the requirement of 1.0 (31 December 2016: 1.50).

Opportunities.

We believe the LBBW Group's liquidity situation will be comfortable in 2018 as well. At the start of the year, LBBW is offered more funds on the money and capital markets than currently required to fund the Group. This was also the case in previous years. The broad- based and well-diversified funding basis would make it possible for LBBW to raise much more in terms of funding resources. We expect the ECB will continue to pursue an expansionary monetary policy in 2018 too, thus providing the money and capital markets with ample liquidity. It is our view that this situation will not change in the short term, even though the current QE program (quantitative easing) may end after September 2018. Investors remain very interested in the LBBW Group's funding products at the start of 2018. Thus there are no discernible restrictions on the funding side for the future performance of the LBBW Group.

The Board of Managing Directors of LBBW regards the liquidity risk management procedures which have been set up, the methods and processes to monitor risks as the setting of liquidity risk tolerance in accordance with Article 435 (1f) CRR together with the Guidelines on LCR disclosures to complement the disclosure of liquidity risk management (EBA/GL/2017/01) as fundamentally appropriately structured in respect of the type, scope, complexity and risk content of the business activities and business strategy.

The liquidity situation is comfortable both based on regulatory and economic liquidity ratios measured using the internal method, and is managed precisely based on internal rules. The good quality of the liquidity reserve also supports the solid liquidity base and, with the potential for unsecured funding in the market in 2017, contributed to LBBW passing the liquidity stress tests by a high margin at all times.

LBBW has a comprehensive multi-tiered process to evaluate, monitor and manage liquidity risks. The starting point is LBBW's Group risk strategy which, together with the liquidity risk strategy, sets out a standard, group-wide framework for dealing with liquidity risks through procedural rules, a formulated liquidity tolerance risk strategy and risk guidelines. As part of this, the Group risk strategy gives concrete shape to the business strategy in issues that are relevant to risk, and combines these to form the framework for LBBW's medium-term planning. As such, LBBW sees itself well prepared to meet future requirements and challenges.

LCR disclosure.

Levels and components of LCR.

In line with Annex II of EBA/GL/2017/01, LBBW is required to disclose quantitative information on the components of LCR. Based on LCR data collated as the end of each month, the unweighted and weighted values (simple average values over 12 month-values before the end of each quarter) look as follows.[1]

The LCR over the entire disclosure period was consistently above the minimum ratio of 80 % required for 2017.

EUR million		Total unweighted value (average)				Total weighted value (average)		
Quarter ending on	31 March 2017	30 June 2017	30 September 2017	31 December 2017	31 March 2017	30 June 2017	30 September 2017	31 December 2017
Number of data points used in the calculation of averages	7	10	12	12	7	10	12	12
High-quality liquid assets								
Total high-quality liquid assets (HQLA)					45 499	49 627	53 654	58 727
Cash outflows								
Retail deposits and deposits from small business customers, of which	12 194	11 916	11 841	11 743	1 003	1 000	999	1 000
stable deposits	7 302	7 090	6 990	6 869	365	355	349	343
less stable deposits	4 892	4 809	4 836	4 859	637	629	634	642
unsecured wholesale funding	60 565	62 691	64 351	66 846	43 692	44 124	44 795	45 945
operational deposits (all counterparties) and deposits in networks of cooperative banks	12 713	14 213	14 863	15 844	3 248	3 569	3 685	3 860
non-operational deposits (all counterparties)	41 007	41 523	41 753	42 307	33 599	33 600	33 376	33 390
unsecured debt	6 845	6 956	7 735	8 695	6 845	6 956	7 735	8 695
secured wholesale funding					3 870	3 654	3 328	2 922
additional requirements	27 768	28 035	27 665	27 529	9 010	8 819	8 493	8 263
outflows related to derivative exposures and other collateral requirements	5 525	5 176	4 785	4 283	4 322	4 015	3 682	3 284
outflows related to loss of funding on debt products	59	122	118	115	59	122	118	115
credit and liquidity facilities	22 185	22 737	22 762	23 132	4 630	4 682	4 693	4 864
other contractual funding obligations	4 387	4 305	4 165	4 054	4 240	4 156	4 013	3 900
other contingent funding obligations	24 645	24 741	25 046	25 487	46	107	285	413
Total cash outflows					**61 861**	**61 861**	**61 914**	**62 443**
Cash inflows								
Secured lending (e.g. reverse repos)	18 552	18 235	17 119	16 009	3 659	3 304	3 121	2 859
Inflows from fully performing exposures	18 487	18 355	17 651	16 622	13 413	13 266	12 794	12 025
Other cash inflows	5 058	5 427	5 872	6 286	4 589	4 698	4 927	5 065
(Difference between total weighted inflows and total weighted outflows arising from transactions in third countries where there are transfer restrictions or which are denominated in non-convertible currencies)					-	-	-	-
(Excess inflows from a related specialized credit institution)					-	-	-	-
Total cash inflows	**42 098**	**42 017**	**40 642**	**38 917**	**21 661**	**21 269**	**20 842**	**19 950**
Fully exempt inflows	-	-	-	-	-	-	-	-

1 As prescribed in the EBA guidelines on disclosure EBA/GL/2017/01, the values and figures should be calculated as the simple averages of month-end observations over the 12 months preceding the end of each quarter. This figure can deviate from the calculation of the LCR which is calculated using the average liquidity buffer and average net cash outflows.

EUR million	Total unweighted value (average)				Total weighted value (average)			
Quarter ending on	31 March 2017	30 June 2017	30 September 2017	31 December 2017	31 March 2017	30 June 2017	30 September 2017	31 December 2017
Number of data points used in the calculation of averages	7	10	12	12	7	10	12	12
Inflows subject to 90 % cap	-	-	-	-	-	-	-	-
Inflows subject to 75 % cap	37 805	38 010	37 039	35 822	21 661	21 269	20 842	19 950
Total adjusted value								
Liquidity buffer					45 499	49 627	53 654	58 727
Total net cash outflows					40 200	40 592	41 072	42 493
Liquidity coverage ratio (%)					112 %	121 %	130 %	139 %

Figure 78: EU LIQ1 - Weighted and unweighted total values of LCR.

Further qualitative information on LCR complementing the LCR disclosure template

The aim of LBBW's funding mix strategy is to achieve diversification in relation to products and investor groups. It offers all the usual liability products on a secured and non-secured basis in various maturity segments.

At the long end, the main sources of funding in 2017 apart from the retail business were the investments of associated savings banks and domestic institutional investors. Pfandbriefe are also a major source of funding for LBBW. These are increasingly being issued in the benchmark segment for LCR purposes. LBBW therefore has a stable funding base, which arises from both the retail business and from the bank's function within the savings bank cooperative association (Sparkassenverbund) and which has market and investor access to the relevant national and international money and capital markets.

LBBW is also broadly diversified when it comes to short maturities which are relevant to LCR. The Bank has very stable (short-term) customer deposits (especially from its retail customers). Another source of liquidity comes from LBBW's function as the central bank for the savings banks and liquidity intermediary between the savings banks. In the LCR calculation, this is evident at the short end of the unsecured wholesale funding from deposits from financials. However, overnight deposits and fixed-term deposits from corporates and other financials (institutional investors) also contribute to diversification at the short end.

Major drivers in conjunction with derivatives positions and potential collateral requirements are additional outflows in view of the impact of adverse market conditions. LBBW calculates such outflows using the »historical look-back approach« (HLBA) as defined in the Commission Delegated Regulation (EU) 2017/208. As at reporting date of 31 December 2017, the average share of outflows calculated based on the HLBA amounted to around 5 % of total net outflows.

LBBW manages compliance with the LCR across all currencies. At the moment, the US dollar is a significant currency in the sense of Article 415 (2) CRR.

All LBBW Group liquidity risks classified as material, including subsidiaries which are material for the liquidity risk are managed centrally by LBBW Treasury. The impact of the subsidiaries on the LCR was generally marginal during the disclosure period.

LBBW sees no further positions that might be relevant for its liquidity profile which are not included in the figures or in the text of the present disclosure.

Appendix - country allocation.

Other countries – Europe:	Other countries – America	Other countries – Asia and Oceania	Other countries – Other
Albania	Argentina	Afghanistan	Egypt
Andorra	Bahamas	Azerbaijan	Algeria
Bosnia-Herzegovina	Barbados	Australia	Angola
Bulgaria	Bermuda	Bahrain	Ethiopia
Denmark	Bolivia	Bangladesh	Benin
Estonia	Brazil	Brunei	Botswana
Faroe Islands	Chile	Burundi	Burundi
Finland	Costa Rica	China	Eritrea
Greece	Curacao	Fiji	Gambia
Guernsey	Dominican Republic	Georgia	Ghana
Ireland	Ecuador	Hong Kong	Cameroon
Iceland	El Salvador	India	Kenya
Isle of Man	Grenada	Indonesia	Libya
Jersey	Guatemala	Iraq	Madagascar
Croatia	Honduras	Iran	Mali
Latvia	Jamaica	Israel	Morocco
Liechtenstein	Cayman Islands	Japan	Mauritius
Lithuania	Columbia	Jordan	Mozambique
Malta	Cuba	Cambodia	Namibia
Macedonia	Mexico	Kazakhstan	Nigeria
Moldavia	Nicaragua	Qatar	Zambia
Montenegro	Panama	Kyrgyzstan	Zimbabwe
Norway	Paraguay	Kuwait	South Africa
Poland	Peru	Lebanon	Syria
Portugal	Saint Kitts and Nevis	Malaysia	Tanzania
Romania	Saint Pierre and Miquelon	Nepal	Togo
Russia	Trinidad and Tobago	Oman	Chad
Sweden	Uruguay	New Zealand	Tunisia
Serbia	Venezuela	Pakistan	Uganda
Slovakia	Virgin Islands	Philippines	International organizations
Slovenia		Republic of Korea	
Czech Republic		Saudi Arabia	
Turkey		Singapore	
Ukraine		Sri Lanka	
Hungary		Taiwan	
Vatican		Thailand	
Belarus		Uzbekistan	
Cyprus		United Arab Emirates	
		Vietnam	

Abbreviations.

ABCP	Asset backed commercial paper
ABS	Asset backed security
AT1	Additional Tier 1 Capital
BaFin	Bundesanstalt für Finanzdienstleistungsaufsicht
BCBS	Basel Committee on Banking Supervision
BelWertV	Beleihungswertermittlungsverordnung
CCF	Credit conversion factor
CCP	Central counterparty
CCR	Counterparty credit risk
CDO	Collateralized debt obligation
CDS	Credit default swap
CET1	Common equity Tier 1
CLN	Credit linked note
CLO	Credit loan obligation
CMBS	Commercial mortgage backed security
COREP	Common solvency ratio reporting
CP	Commercial paper
CR	Credit risk
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
CRSA	Credit Risk Standardized Approach
CSA	Credit support annex
DCF	Discounted cash flow
DRV	Deutscher Rahmenvertrag (German global agreement)
DSGV	Deutscher Sparkassen- und Giroverband (German Savings Banks Finance Group)
EAD	Exposure at default
EBA	European Banking Authority
ECAI	External Credit Assessment Institution
EL	Expected loss
EAA	European Economic Area
FICC	Fixed Income Clearing Corporation
FINREP	Financial Reporting
GMRA	Global Master Repurchase Agreement
GMSLA	Global Master Securities Lending Agreement
HGB	Handelsgesetzbuch (German Commercial Code)
IAA	Internal Assessment Approach
ICRE	Rating for international commercial real estate
IDW	Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany)
IFRS	International Financial Reporting Standards
IMM	Internal Model Method
IPV	Independent Price Verification
IRBA	Internal Ratings Based Approach
ISDA	International Swaps and Derivatives Association
KKR	KundenKompaktRating
LGD	Loss given Default
NAV	Net Asset Value
OTC	Over the counter
PD	Probability of Default
RCP	Risk classification procedure
RMBS	Residential mortgage backed security
SAG	Sanierungs- und Abwicklungsgesetz (German Recovery and Resolution Act)
SEC	Securitization
SIC	Standing Interpretations Committee
SKS	Sparkassen KundenScoring
SME	Small and medium-sized enterprises
SPC	Special purpose company
SPV	Special Purpose Vehicle
T2	Tier 2 capital
UCI	Undertakings for collective investment
VaR	Value-at-risk

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